LOST LAPTOPS
Barbara Gomolski says better IT asset tracking could prevent the loss of customer data. **PAGE 44**

SCHOOLED IN SECURITY
Ohio University makes big changes in IT after a series of data breaches. **PAGE 6**

COMPUTERWORLD

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CEO Change Gives Novell New Hope

Users praise Hovsepian but say big challenges await him

BY ERIC LAI AND TODD R. WEISS

Novell Inc.'s ouster of Chairman and CEO Jack Messman last week may have been sudden, but it didn't shock many Novell users or industry analysts, who were unequivocal in praising newly appointed CEO Ron Hovsepian.

In addition to the words of praise, though, they pointed out that Hovsepian faces major challenges in trying, once and for all, to turn Novell around. Even Novell loyalists said that the software vendor continues to be plagued by declining revenue, weak marketing, resource limitations and an inability to capitalize on its acquisitions of SUSE Linux AG and other Linux-oriented vendors.

"Novell is not Microsoft — they don't have the capital resources to support so many products," said Brent Biernat, assistant vice president of network services at COCC, an Avon, Conn.-based company that provides technology services to banks. "They are going to have to make some hard decisions that will likely make some customers unhappy."

But Hovsepian is better suited to the tasks ahead at Novell than Messman was, said Biernat, who has met with the new CEO five times since Hovse-

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INSIDE

[illegible] at Novell
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Apps Project Vexes Colleges

Rollout breaks budget, misses deadlines

BY MARC L. SONGINI

The 11-campus North Dakota University System continues to work on a troubled rollout of PeopleSoft ERP and academic software that critics said has exceeded its budget and missed deadlines.

The Web-based system, based on Oracle Corp.'s PeopleSoft Enterprise 8 software, is known as ConnectND and handles academic tasks such as grant and contracts management, as well as payroll and human resources functions.

The effort to date has been "a train wreck," said Gerald Groenewold, director of the

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Cisco Eyes Pricing on Software

Chambers says company may reduce bundling

BY MATT HAMBLEN
LAS VEGAS

Despite criticism from some customers about Cisco Systems Inc.'s pricing, CEO John Chambers said last week that the company may not be charging enough for its technology and needs to modify its practice of bundling software with its networking hardware.

"We need to evolve our software strategy," Chambers said during a roundtable discussion with reporters at the Cisco Networkers 2006 user conference here. "We have a

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¹Based on published power usage data available from both companies, the IBM HS20, model 79[illegible]EU, BladeCenter with 2GHz dual core 2M cache processors, 8GB of memory, 2x36GB SAS HDDs, dual Ethernet, dual Fibre Channel can use up to 37% less power than the HP BL20pG3 with 3.0GHz 2M cache processors, 8GB of memory, 2x36GB SCSI HDDs, dual Ethernet, dual Fibre Channel. Analysis performed on April 10, 2006. IBM, the IBM logo, BladeCenter, and Take Back Control are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, Intel Inside, the Intel Inside logo, and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and/or other countries. Other company, product, and service names may be trademarks or service marks of others. © 2006 IBM Corporation. All rights reserved.

_THE INVASION

_DAY 16: These servers are so hot, we're running the AC at full blast, and the thermometer is still pushing 140°. Had to relax the dress code in the server room. No choice. It's towels and flip-flops until we get this heat problem under control.

_Gil says he's lost a lot of weight. I hadn't noticed.

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_Oh, apparently HR had a problem with the dress code but couldn't call and tell us, since the phones had melted.

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In the Management section: There's more than one way to collect user requirements, say IT professionals like Susan Burk of Massachusetts Mutual Life Insurance. The more methods you know about, the better your results will be. **Page 40**

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Why Isn't Europe Suffering a Wave of Data Breaches?

JAY CLINE

SECURITY: Privacy columnist Jay Cline looks at the disparity between the U.S. and the EU when it comes to the inadvertent release of personal information. **www.computerworld.com/security**

Get Ready for Linux

OPERATING SYSTEMS: Planning a migration? Take a look at this detailed questionnaire from *Unix to Linux Porting: A Comprehensive Reference*, by Alfredo Mendoza, Chakarat Skawratananond and Artis Walker (Prentice Hall, 2006). It's designed to help you make sure you have all the information you need when making the move to Linux. **www.computerworld.com/software**

Bracing for the Next Katrina

NETWORKING: IT pro Greg Schaffer was tasked with maintaining a Web presence in the event of a disaster. Read about how he did it. **www.computerworld.com/networking**

Pack In Those Access Points

MOBILE/WIRELESS: Columnist Craig J. Mathias explains dense deployments, which he believes are the key to eventually replacing the wired infrastructure with wireless LANs. **www.computerworld.com/mobilewireless**

Listen to Learn About the Latest Storage Trends

PODCAST: Hear about the effect the new e-discovery rules could have on your storage needs. Plus, find out about the role the porn industry is playing in the struggle between competing high-definition DVD formats. **www.computerworld.com/blogs/storagethisweek**

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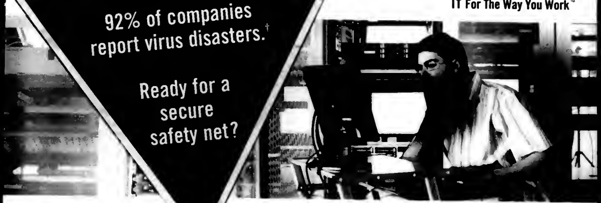

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[†] Cyber Security: A Crisis of Prioritization, February 2005.

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AT DEADLINE

Intel Cuts to Continue

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Eclipse to Update 10 Projects This Week

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Oracle Cites Large Deals in Strong Q4

Oracle Corp. executives cited an increase in the overall number of deals and the size of individual contracts as reasons for strong sales and profit growth in the company's fourth fiscal quarter.

ORACLE BY THE NUMBERS

Q4 '06	$1.3B
Q4 '05	$1B

SAP Employees Elect Workers' Council

SAP AG employees have elected a workers' council, ending the company's reign as one of the largest German employers without such a group to represent workers in discussions with management. Nearly 65% of the software maker's 11,000 employees turned out to elect 37 members to the council. The council will elect a chairman on July 3. SAP management opposed the election of the council.

School Out to Improve Its Marks on Security

Breaches prompt IT overhaul, internal suspensions and new spending plans

BY JAIKUMAR VIJAYAN

OHIO UNIVERSITY last week said it has begun to overhaul its central IT department, suspended two IT supervisors and taken other steps following a series of security breaches, including one that exposed the Social Security numbers and other personal data of 137,000 people.

In an announcement posted on its Web site, the university said it also will ask its board of trustees for $2 million in new funding to better secure its IT systems. The Athens, Ohio-based school will also develop a universitywide strategic plan for IT, an effort that will be jointly led by CIO Bill Sams and its chief financial officer.

Roderick J. McDavis, Ohio University's president, said in a statement that he was "angry [about] and embarrassed by" the IT security lapses. "While we cannot correct mistakes of the past, I am determined that the university will learn from these oversights and make the appropriate changes," he said.

The measures now being put into effect at the school are better than doing nothing at all, said Pete Lindstrom, an analyst at Spire Security LLC in Malvern, Pa. "But wouldn't it have been nice," Lindstrom said, "if they had gotten religion before all this happened?"

School officials should have paid the same level of attention to IT security before the breaches occurred that they are now, Lindstrom added. "The frustrating thing about security is that folks are awful at preparing for future uncertainties but good at addressing past improprieties," he said.

Sams couldn't be reached last week for comment on the changes being made at the university. The various steps were recommended by Moran Technology Consulting LLC, a Naperville, Ill.-based firm that was hired to audit the school's IT security practices after three breaches were discovered in late April and early May. Moran then discovered two additional breaches while conducting its review.

After receiving the audit report, the university suspended its director of communication network services and its manager of Internet and systems, pending the completion of a disciplinary investigation. The two supervisors "will be provided an opportunity to respond to the findings of the report prior to a final determination that could include termination," the school said in its announcement.

Two consultants have been hired on an interim basis to augment the central IT management team. The university said it has also created the position of chief of staff to the CIO, although that job has yet to be filled. Meanwhile, three workers who were placed on administrative leave in early May will be allowed to return to work, based on the findings of the security review.

The restructuring of the central IT department is designed to establish "clear roles, responsibilities and accountabilities" for staffers and ensure that security is properly provided at both the central and distributed levels, the university said. By month's end, it noted, more than 90% of its central IT workers will be affected by the restructuring.

As part of its response to the breaches, the school said it will deploy real-time and scheduled virus-protection capabilities on every Windows-based server. It will also audit all server accounts to determine whether any have been compromised and verify that password enforcement, complexity and length requirements are in place. ▪

Ohio University has learned of five data breaches over the past two months:

- The FBI informed university officials on April 21 that it was in possession of disk drives containing patent data and other files from a server at the school.
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- The school announced on May 4 that a server at its Hudson Health Center had been broken into, exposing information on nearly 60,000 people.
- A consulting firm hired to do a security audit identified two more breaches, which involved servers that contained IRS 1099 and Web-based forms.

List of Data Breaches Grows

THE DIZZYING PACE of security breach notifications shows no signs of abating, with companies such as American International Group Inc. and ING U.S. Financial Services adding themselves to the list of businesses disclosing data compromises.

New York-based AIG this week plans to start notifying about 970,000 people of a server theft that potentially could compromise their personal data. A password-protected file server containing insurance information submitted by brokers on behalf of various employers was stolen from inside a locked room at an AIG facility on March 31, said company spokesman Christian Murray. It has taken the insurance and financial services firm until now to determine exactly what information the server contained, Murray added.

In Washington, a laptop PC containing the Social Security numbers and other personal data of some 13,000 District of Columbia government workers and retirees was reported stolen on June 12, apparently having been taken during a burglary at the home of an employee of ING U.S. Financial Services. The Atlanta-based unit of ING Groep NV manages the district's employee deferred-compensation plan.

A spokeswoman for the District of Columbia's chief financial officer said that the data on the laptop wasn't encrypted and the machine wasn't password-protected. A police investigation into the theft is continuing, the spokeswoman added.

ING said in a statement that it is "aggressively moving forward with a comprehensive confirmation process [so] that all of our laptops meet our encryption and password-protection policy requirements." In addition, the company said it has "implemented an immediate policy to restrict any laptop from being exposed to the public domain until it's properly protected."

Western Illinois University in Macomb was hit by a recent security breach in which multiple servers were hacked, resulting in the potential compromise of the names, credit card numbers and Social Security numbers of up to 240,000 people. The system break-in was discovered on June 5, although WIU has just begun notifying affected individuals.

"Our first efforts were focused on fixing the breach and taking additional security measures," the school said in a statement. "The process of determining the number of records potentially viewed and preparing mailings has taken longer than anticipated."

– JAIKUMAR VIJAYAN
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Group Targets IT Job Ads Seeking H-1B Workers

Programmers Guild hopes to spur enforcement of discrimination laws

BY PATRICK THIBODEAU

A PROGRAMMER advocacy group last week said it is filing complaints with the U.S. Department of Justice against more than 300 IT services firms that it claims are discriminating against U.S. citizens and permanent residents by placing help-wanted ads seeking workers who have H-1B, L-1 or student visas.

John Miano, founder and treasurer of the Summit, N.J.-based Programmers Guild, said he thinks ads expressing a preference for H-1B holders in particular have become widespread because of a lack of oversight by the U.S. government. Such restrictions are illegal under the Immigration and Nationality Act, he claimed.

"There isn't much enforcement going on," Miano said. "So we are trying to do what we can do to bring private enforcement against these employers." He added that about 100 complaints have been filed so far.

Typo or Discrimination?

One of the largest companies targeted thus far is iGate Mastech, a Pittsburgh-based software services firm and IT staffing agency with about 1,000 employees, one-third of whom are H-1B visa holders. Last week, iGate Mastech posted an ad on Dice Inc.'s online IT job board seeking Java developers. The job description included this language: "Only looking for H-1B visas."

About 10 other ads placed by the firm on Dice's site didn't have similar language, according to a spot check by *Computerworld*. The iGate Mastech recruiter listed as the contact for the Java job openings called the H-1B wording in that ad a typo.

But Murali Balasubramanyam, the firm's senior vice president of human resources and recruiting, said that the ad was placed for a large client that first tried to hire U.S. citizens and permanent residents and was unable to do so.

When companies "cannot find suitable candidates," he said, "they come to staffing companies like us and say, 'We haven't been able to find a local citizen here. Can you now get us an H-1B candidate?' "

Rajiv Khanna, an immigration attorney in Arlington, Va., who is representing some companies that have received notices of complaints from the DOJ, has posted a brief advisory on his Web site. "The charges allege that these employers placed ads inviting only nonimmigrants to apply," the advisory reads. "Please stop all such advertising. [The] DOJ is likely to take discriminatory ads very seriously."

Citing the ongoing work he is doing for his clients, Khanna declined to discuss the advisory or the issue as a whole.

DOJ officials had yet to respond to a list of questions about the ads by press time.

The complaints underscore the long-simmering battle over the use of visas to bring foreign IT workers into the U.S. Supporters of the H-1B program include Christopher Carter, CEO of Carter Consulting Inc., a Milwaukee-based company that provides third-party support for SAP systems. Half of Carter's 22 full-time staffers are H-1B holders, and some of the contract workers he also relies on have visas as well.

Visa holders are needed to cover a shortage of SAP support expertise in the U.S., Carter said, adding that he hires the most qualified people for positions and pays his H-1B workers salaries and benefits at the same levels that other full-time employees receive.

Carter said that, in general, H-1B holders are less likely to move to other jobs and are more willing to work extra hours on projects than their U.S. counterparts are. "They are forcing our U.S. people to step to the plate more," he said.

While Carter sees merit to the H-1B program, Richard Harris has been writing to members of the U.S. Congress from his home state of Arkansas to urge them to vote against raising the annual cap of 65,000 H-1B visas.

Harris said that several years ago, he was facing a layoff at a company he asked not be named. He saw an internal job posting that his database skills qualified him for, but it was limited to H-1B holders. Harris, who now works at a bioinformatics firm, said there are plenty of U.S. residents who could fill IT job vacancies. But, he claimed, employers hire H-1B workers to save money. "Let's put the real reason out there," he said. ▸

Open Messaging Protocol May Challenge IBM's WebSphere MQ

BY ERIC LAI

JPMorgan Chase & Co., Cisco Systems Inc., Red Hat Inc. and five other organizations have formed a working group to create an open-standard messaging protocol that allows interoperability among various messaging and Web services technologies.

The Advanced Message Queuing Protocol, or AMQP, will interoperate with existing specifications such as Java Message Service (JMS), SOAP, WS-Security, WS-Transactions and others, executives from the AMQP Working Group member companies said during a conference call last week.

The group downplayed potential competition between AMQP and existing messaging formats, including IBM's dominant WebSphere MQ integration technology.

John O'Hara, a vice president and distinguished engineer at JPMorgan, said that because AMQP defines a model for routing and storing queue-based messages and offers a network-wire-level protocol, it can complement any messaging format, including proprietary ones like WebSphere MQ.

"There's a lot of awkwardness today because there isn't an open transport protocol," O'Hara said. "[AMQP] makes it possible to plug that gap."

Aggressive Testing

JPMorgan has already rolled out an AMQP-based trading system for 800 users on five continents, based on a test version of the protocol. The system runs in three data centers with Windows-, Linux- and Solaris-based hardware running applications written in Java, C# and C++, O'Hara said.

"This is an aggressive testbed," he said. "It's not perfect. We're not arrogant enough to say we've got a complete solution yet. But we sent the heavy cavalry across the bridge first to see if it would break, and it didn't break."

New York-based JPMorgan had started work on the protocol on its own prior to spearheading the formation of the AMQP group.

JPMorgan and the working group have completed work on Version 0.8 of the specification. Within 18 months, the group hopes to finish development on a full 1.0 version, which will be published under an open and royalty-free license. At that time, the working group will also present the specification to an as yet undetermined standards body.

IBM's WebSphere MQ held 81.3% of the messaging market in 2005, according to WinterGreen Research Inc. in Lexington, Mass. Other messaging formats include the proprietary WebLogic Server JMS from BEA Systems Inc. and open-source technologies such as OpenJMS from The OpenJMS Group or MantaRay from Coridan Inc.

Ron Schmelzer, an analyst at ZapThink LLC in Baltimore, said that AMQP could prove to be a threat to existing messaging specifications if it can deliver on its promise of providing a cheaper, less complex and more heterogeneous alternative.

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>
> **JOHN O'HARA**, VICE PRESIDENT, JPMORGAN CHASE & CO.

"From a mind-share perspective, with regard to messaging and interop standards for sure, I think AMQP will be seen as a potential alternative," Schmelzer said.

Karla Norsworthy, vice president of software standards at IBM, said customers are already well served by using WebSphere MQ as an interoperability technology.

"The number of connectors we already have is huge," she said. "We think AMQP is less about how to get interoperability among unlike protocols than a proposal to simply invent a whole new messaging infrastructure."

Other members of the AMQP consortium include messaging and Web services software providers Envoy Technologies Inc., iMatix Corp., 29West Inc., Iona Technologies PLC and Twist Process Innovations Ltd. ▸

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BRIEFS

HP Dissolves Global Ops to Cut Costs

Hewlett-Packard Co. will dissolve its Global Operations organization and delegate its activities to three business units: the Imaging and Printing Group, the Personal Systems Group and the Technology Solutions Group. HP estimated that the restructuring, which may include a layoff of personnel, will boost profits by $1.9 billion annually. The restructuring is slated to be completed by Oct. 31, which is the end of HP's fiscal year.

EMC Buys Content Management Firm

EMC Corp. has acquired ProActivity Software Solutions Ltd., a content management software provider, for an undisclosed amount. ProActivity's business process management software will complement EMC's Documentum BPM package. The integration of ProActivity into EMC should be complete by the middle of next year with the scheduled shipment of the next major Documentum upgrade.

Verizon Says Vonage Violated Patents

Verizon Communications Inc. has filed a lawsuit against Vonage Holdings Corp., claiming that the Internet telephony provider uses patented Verizon technologies in its voice-over-IP system. Verizon is seeking an injunction preventing the continued use of the technologies as well as payment for damages. Vonage said that only proprietary and licensed technologies were used to develop the VoIP services.

Microsoft Gives $1M To Slavery Victims

Microsoft Corp. is donating $1 million to several groups in Asia that are battling the modern human slave trade, in an effort to curb the practice and draw attention to the issue. The funds, distributed in Cambodia, India, Indonesia, the Philippines, Singapore and Thailand, will be used to train victims in IT skills.

[ON THE MARK]

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

PITY ABOUT HIS SEVERANCE PACKAGE.
CIO

MATTHEW FAULKNER

So Long, CIO. It was fun . . .

. . . while it lasted. The long rise from data processing manager to the corner office and C-level title may be coming to an end, especially if your company is in financial services, publishing and other information-oriented markets. "To the extent that your business is information, you have no need for a CIO," contends Charles Stack, CEO of Flashline Inc., a Cleveland-based vendor of service-oriented architecture tools.

CIOs are losing their grip on IT

Stack argues that business professionals are rapidly becoming fluent users of IT and that these end users understand how to align IT with the business just as well as a CIO does. Given that, Stack wonders whether it makes sense to continue to separate IT from business units. "If I run a line of business that is information-based, I want the tech group to report to me, not a peer," he says. Although Stack won't predict when CIOs as a group will become extinct, he does say that their glory days are behind them.

Java generates jingles in Sun's pockets . . .

. . . in three ways. Jonathan Schwartz, Sun Microsystems Inc.'s new CEO, has promised to soon reveal the mystery of how much money his company gets from Java — a number that Wall Street is keen to learn because Java offers Sun its most distinctive technology advantage over competitors.

According to Jim McHugh, senior director of software portfolio strategy at Sun, Schwartz will be looking at three key areas to determine the revenue number. First, makers of cell phones, handheld devices and other hardware products fork over an upfront license fee for Java and make another payment to Sun for each Java-ready unit they sell. Sun also gets cash from training developers to use Java. And the company sells its own Java tools to users. McHugh argues that Java's market position is improving among developers, citing last month's total of 25 million downloads of the software from Sun's Web site — up more than 25% from the levels during last year's second quarter. But no matter how impressive the revenue tally that Schwartz ultimately unveils is, what investors and Sun users would really appreciate is a positive number on the company's bottom line.

Send your workers anywhere with . . .

. . . Sybase's mobility software suite. This summer, Sybase Inc.'s iAnywhere Solutions Inc. subsidiary will be teasing out the first modules in its Information Anywhere Mobility Suite. According to Sean McCleary, a senior product manager at iAnywhere, the suite gives IT departments more control of mobile devices. Its e-mail component, due at the end of July, integrates more than 130 different models of handhelds with Exchange, Notes and GroupWise mail servers. A device management tool that's scheduled to ship in August will let IT control the software that end users are allowed to run on mobile devices and remotely update approved applications. And in September, Dublin, Calif.-based iAnywhere plans to release a security tool offering password protection, encryption of stored and sent data, and remote "killing" of devices. Pricing for the suite starts at $100 per device.

Make e-mail security easy for . . .

Keep it simple on security, advises

. . . your end users. Bob Janacek worries that if you depend on end users to comply with corporate security policies on messaging, you won't be all that secure. "Security is not easy to use," says Janacek, who's chief technology officer at CertifiedMail.com Inc. in Morristown, N.J. Security software, then, has to be drop-dead simple. Janacek says his company's namesake software, which can be hosted as a service or licensed for on-premises use, lets IT managers set policies that enforce corporate security rules. That means end users don't have to make decisions such as whether to encrypt messages. CertifiedMail can also be used in place of FTP servers because it can transmit files of up to 2GB. An update being released this week lets users reply via e-mail to RSS feeds — all within a secure, encrypted context, Janacek says. Pricing starts at $99 per seat annually.

1B

Number of Java smart phones in use, claims Sun.

A unified approach to compliance . . .

claims that true compliance is identity-driven

. . . with regulations requires identity-driven monitoring. Deepak Taneja, CEO of Aveksa Inc. in Waltham, Mass., disdains vendors that tack on "compliance" as a claimed feature in products simply because the tools monitor one technology or another. You need to build compliance monitoring from the ground up, Taneja argues. He says Aveksa Compliance Manager, a software product that's scheduled for release in late July, does just that. The software is designed to monitor and report on end-user violations of a company's full burden of compliance obligations. It understands every user's identity and application access rights and can tell if unauthorized changes have occurred, Taneja says. Pricing starts at about $75,000. ▪

SOA App Quickly Boosts Storm Response

First app in Austin Energy SOA project processes 20,000 customer calls a day

BY HEATHER HAVENSTEIN

On May 3, Andres Carvallo, CIO at Austin Energy, joked that a spring storm was needed to test the first, newly installed application to run on the electric utility's service-oriented architecture (SOA).

At 9 p.m. the next day, Carvallo got his wish as a severe rain and hail storm rumbled through Austin, leaving 52,000 customers without electricity and putting the new AECall application into action only a day after going into production.

AECall, which links the Austin-based utility's outage management system and call center application, processed more than 20,000 calls per day for three days during the storm. The previous call-processing system would have been overloaded at 4,000 calls per day. "Lo and behold," Carvallo said, "we tested the system," and it worked.

The application was the first to emerge from a plan initiated more than two years ago to build and use an SOA to integrate applications that span the utility's five divisions, he said. At the same time, the new system will eliminate redundant legacy systems, Carvallo added.

IBM Tools Put to Use

After a first stab at building an SOA failed, Austin Energy nine months ago started using IBM's Rational development tools to re-engineer all of its 72 major business processes to be tied into an SOA. The company is also using IBM Rational tools to help model and build new business processes to be linked to the SOA. IBM's WebSphere middleware is used to run the services.

"The SOA is driving everything we do at Austin Energy," Carvallo said. "It touches every major enterprise application."

The new AECall application, for example, uses five different Web services to query the multiple databases where data about customers is housed and to reconcile that information for the outage restoration application, he said.

The utility is now building its second SOA application, which will use Web services to link geographic information system maps to the application its 600 mobile crews use to respond to customer calls. That project is scheduled for completion before the end of this summer, according to Carvallo.

WILL VAN OVERBEEK

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ANDRES CARVALLO, CIO, AUSTIN ENERGY

Before working with IBM, Carvallo said, the company made "some unfortunate mistakes" working with another vendor on the earlier failed effort to build an SOA. He declined to name the other vendor.

Carvallo blamed the early failure on the lack of an initial hard-and-fast focus on business processes and a lack of adequate support and services from the undisclosed vendor.

In addition, the company's previous "boil the ocean" integration strategies were driven by IT rather than the business, he said.

"This one is business-driven," Carvallo said. "This time around, when the business process is at the heart of the integration, change management happens much easier because the business user wants it to happen. It is not really an SOA if it doesn't involve business process innovation."

Carvallo declined to disclose the cost of installing the SOA but he said that it won't be more than the cost of maintaining the legacy systems that the SOA will eventually replace.

Ken Vollmer, an analyst at Forrester Research Inc., said that companies interested in boosting the efficiency of business processes with an SOA shouldn't mention the term to its business users.

He said that IT should work with business users on a "business process management improvement effort, and that will be the impetus for an SOA."

Vollmer also noted that Austin Energy started its latest SOA effort with the outage application, which could show a quick and visible improvement in call processes. "Even if you have a huge effort in total," Vollmer added, "you need to pick off a small piece that can show value." ●

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Auditor's Report Criticizes Florida's Voter Database

State agrees to fix security woes that could lead to unauthorized access

BY MARC L. SONGINI

FLORIDA VOTER registration data can be vulnerable to theft, corruption, unauthorized access and alteration, despite the best efforts of elections officials, indicated a report by the Florida auditor general.

The report, released earlier this month by Auditor General William Monroe, found several IT security problems with the state's central voter registration database.

"There were some procedures that were missing we felt needed to be in place," noted Jon Ingram, an IT audit manager in the Florida auditor general's office and a contributor to the report.

For instance, Ingram noted that the review of the system found that a state worker was erroneously given access to the database and that a worker whose contract was finished mistakenly retained access.

The Florida Voter Registration System (FVRS) database was created by Secretary of State Sue Cobb's office to comply with the federal Help America Vote Act. HAVA mandates that every state create a centralized voter information repository to, among other things, protect against election fraud. Work on the project started in 2003, and the database was rolled out in January.

The auditor's report recommends that Cobb's office create a set of security procedures to help county elections officials ensure that FVRS data is protected from unauthorized access. The report also calls on the state to establish virus-protection, patch management, maintenance and system recovery policies.

"A critical system could be secure today and vulnerable tomorrow because of software changes, and the vulnerability goes down even to the workstation level, which could have an impact on the whole network," said Ingram.

Dawn Roberts, head of the Florida Division of Elections, said that the report shouldn't cause undue concern among the state's voters. She noted that the division requested the audit to help ensure the system's security. "There's nothing in the audit to suggest that FVRS is compromised," she noted.

Roberts added that a risk-assessment effort is slated to be completed by the end of June and that a governance model is also being developed by her division.

One county elections official said that some of the problems unearthed in the audit may be more serious than state officials believe.

Leon County Elections Supervisor Ion Sancho said that the auditor's report indicates "serious problems" with the security and integrity of the system that could take significant time to fix. "The first election is around the corner, and they have not been able to iron the bugs out of this. I'm getting very concerned," Sancho said.

Consultant Paula Hawthorn, a former database executive at Hewlett-Packard Co. and other vendors, said potential security and data-integrity problems with voter registration databases are hardly unique to Florida.

Earlier this year, Hawthorn chaired an Association for Computing Machinery committee that examined the state of voter registration databases. The group concluded that the voter registration database plans of a number of states lack adequate security measures. ▸

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"The data I have collected and feel some responsibility for is now out of my hands," she said. "I have zero control over what happens once it's in the custody of the secretary of state. We do know that nobody is excellent at managing databases with respect to privacy."

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"The [voter registration] database is entirely implemented on a dedicated private network, including state-owned, dedicated workstations for data exchange with counties," she said. "Servers, workstations and network components are hardened to industry standards and verified by regular scanning and analysis."

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Judge Dismisses Data Breach Lawsuit

Credit union fails to recover cost of reissuing cards

BY JAIKUMAR VIJAYAN

Security analysts often warn that companies hit by data breaches could find themselves becoming the targets of lawsuits over their alleged IT security failures. But thus far, plaintiffs typically have been on the losing end of the few cases to make it to court.

The latest example is a federal judge's decision last week to throw out a lawsuit that was filed by the Pennsylvania State Employees Credit Union (PSECU) against Cincinnati-based Fifth Third Bancorp.

The Harrisburg-based credit union was seeking to recover the $100,000 it spent to cancel and reissue about 235,000 Visa credit cards that were compromised in a March 2004 security breach at BJ's Wholesale Club Inc. in Natick, Mass. The PSECU argued in court that Fifth Third was liable for the costs because it processed credit card transactions for BJ's and should have ensured that the retailer was in compliance with Visa U.S.A. Inc.'s security requirements.

The credit union's lawsuit for breach of contract and negligence also included BJ's as a defendant. But all of PSECU's claims against the retailer, and three of its four claims against Fifth Third, were dismissed last October by Judge William Caldwell, who sits at the U.S. District Court in Harrisburg.

Last week, Caldwell threw out the remaining claim against Fifth Third, ruling that PSECU wasn't a third-party beneficiary to the contract between Fifth Third and Visa and therefore wasn't entitled to seek reimbursements.

"I'm disappointed with the court's ruling," PSECU President Greg Smith said in a comment sent via e-mail. "It's a little frustrating to know that PSECU was the one party in this situation that kept its word [and] honored its contracts, but when someone else didn't, we're still the one to pay."

As a result of the BJ's breach, Visa has required Fifth Third to pay close to $900,000 in fraud-related charges to several other credit card issuers, according to court documents. Visa has also collected more than $550,000 in fines from Fifth Third for the latter's failure to live up to the IT security obligations in its contract.

Stephanie Hagen, a spokeswoman for Fifth Third, said the bank doesn't comment on litigation issues as a matter of corporate policy.

The decision in Pennsylvania shows that "there really is a high barrier for plaintiffs to bring these kinds of lawsuits," said Ethan Preston, an attorney at Kamber & Associates LLC in New York.

"We don't quite have the laws yet that make people liable for security as a matter of statutory law," he said. "It's unfortunate, because there is a lot of harm that can be caused because of negligent security. But if you look at the legal basis behind the decision, it isn't entirely unexpected." ▸

IT May Face New E-discovery Rules in December

Firms installing apps, anticipating legal requirements

BY SHARON FISHER

New rules for electronic discovery of documents in civil cases go into effect in December. Lack of compliance could result in significant penalties for companies, legal experts and executives said.

The new rules were created by an advisory committee to the Judicial Conference of the United States, which oversees administrative and policy issues for federal courts, and were adopted by the U.S. Supreme Court on May 1, said Ron Hedges, magistrate judge in the U.S. District Court in Newark.

Unless Congress acts to change the rules, they will become effective on Dec. 1, Hedges said.

The new e-discovery rules are listed in a 300-plus page document that was created by the advisory committee.

The rules require that when two companies are involved in civil litigation, they must meet within 30 days of the filing of the lawsuit to decide how to handle electronic data. The parties must agree on which records are to be shared and in which electronic format, as well as on a definition for "accessible data," said John Bace, an analyst at Gartner Inc. in Stamford, Conn.

It was partly to ensure compliance with legal discovery rules that EMC National Life Co. in Urbandale, Iowa, started using an e-mail archiving service from Fortiva Inc. in Norwalk, Conn., as part of a general corporate document-retention policy. "The ability to do legal discovery with their searching capabilities sold us on [the Fortiva service]," said Marc Comstock, assistant vice president and technical services manager at EMC National Life.

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"Eventually, we'll have to find a way to [capture] text messages," he said.

New features in backup and archiving products may make it easier for users to retrieve their own data but could wind up opening corporations to more legal liability, said Deidre Paknad, CEO of PSS Systems Inc., a Mountain View, Calif.-based maker of software intended to help companies create and manage global retention policies. "Anyone in litigation is going to say that storing less data is always better. Retain what they need to — nothing more, nothing less," because retaining more data than required could give an opposing side more ammunition, Paknad said.

Key Changes

E-discovery rules in civil lawsuits:

- **Require discussions between the court and both parties about electronic discovery.**
- **Require both parties to agree on a format for electronic discovery.**
- **Do not require litigants to produce electronic data that isn't readily accessible.**

SOURCE: JOHN BACE, [illegible]

Planning Ahead

Even organizations that may be exempt from such retention rules, such as public entities, are starting to take steps to comply with them. "We know that ultimately, it'll come to pass that we'll have to be compliant," said Jory Wolf, CIO for the city of Santa Monica, Calif., which has a population of 93,000. Wolf said it's unclear whether the new rules will require compliance by the city.

To help manage possible e-discovery requests, the city is setting up a document management system using Compulink Management Center Inc.'s Laserfiche document management system and Hewlett-Packard Co.'s Reference Information Storage System. The goal is to help employees keep track of documents and get rid of those they don't need, Wolf said.

> **We have IM turned off. We don't let them use private e-mail.**
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Wolf has also set up new internal rules forbidding the use of instant messaging and Web-based e-mail that can't easily be archived and tracked. "We have IM turned off. We don't let them use private e-mail," he said.

Bace said that "organizations need to look at how implementing records management can help corporate performance. They need to use it to some business advantage, and not just as a business device."

The alternative is costly, Paknad noted. Previously, "it didn't cost you tens of millions if you screwed up," she said. "Now it will." ■

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SOURCE: FLORIDA AUDITOR GENERAL

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E-discovery rules in civil lawsuits:

- [illegible]
- [illegible]
- [illegible]

SOURCE: JOHN BACE, GARTNER INC.

Planning Ahead

Even organizations that may be exempt from such retention rules, such as public entities, are starting to take steps to comply with them. "We know that ultimately, it'll come to pass that we'll have to be compliant," said Jory Wolf, CIO for the city of Santa Monica, Calif., which has a population of 93,000. Wolf said it's unclear whether the new rules will require compliance by the city.

> **We have IM turned off. We don't let them use private e-mail.**
>
> **JORY WOLF**, CIO,
> CITY OF SANTA MONICA, CALIF

To help manage possible e-discovery requests, the city is setting up a document management system using Compulink Management Center Inc.'s Laserfiche document management system and Hewlett-Packard Co.'s Reference Information Storage System. The goal is to help employees keep track of documents and get rid of those they don't need, Wolf said.

Wolf has also set up new internal rules forbidding the use of instant messaging and Web-based e-mail that can't easily be archived and tracked. "We have IM turned off. We don't let them use private e-mail," he said.

Bace said that "organizations need to look at how implementing records management can help corporate performance. They need to use it to some business advantage, and not just as a business device."

The alternative is costly, Paknad noted. Previously, "it didn't cost you tens of millions if you screwed up," she said. "Now it will." ▸

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BRIEFS

Nugent Is Named New CTO at CA

CA Inc. has named Al Nugent to replace Mark Barrenechea as chief technology officer, and longtime company veteran Sam Greenblatt, previously senior vice president of technology, was named senior vice president of innovation. Nugent will retain oversight of the vendor's Unicenter enterprise systems management unit until a successor is named. Barrenechea left CA last month to join investment firm Garnett & Helfrich Capital.

Sun Ships Beta Of Java SE 6

A beta version of Sun Microsystems Inc.'s Java Standard Edition 6 technology is available for download. Java SE 6 incorporates Java DB, which is the Sun-supported distribution of the open-source Apache Derby Project, and part of the NetBeans GUI Builder. Slated for final release this fall, it was developed by Sun engineers and more than 330 external developers.

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IBM has unveiled technology that can make it possible to sign and manage IT contracts online. Contracts OnLine was developed over the past two years by IBM's research organization. The Web-hosted application can be used without charge by IBM business partners and customers in the U.S. About 700 partners and customers have been testing the software.

Microsoft to Sync Services of Sign-on

Microsoft Corp. is planning to sync its Active Directory with its Live Web-based services to provide single sign-on capabilities for applications and services both inside a company network and on the Web. The company will use Windows Live ID, formerly Microsoft's Passport service, to link the systems. Microsoft would not say when the capability will be available.

Continued from page 1

PeopleSoft

University of North Dakota's Energy and Environmental Research Center, which develops energy-efficient and environmental technologies. The nonprofit group, based on the Grand Forks campus, relies on ConnectND for its operations.

"The old systems had Band-Aids, but they worked," Groenewold said. "Just give me something that works. [ConnectND] has cost our organization a phenomenal amount of money to try and implement."

The financials software is at times unable to quickly provide account balances to customers, said Groenewold — a task that once took minutes now can take weeks. So far, the installation has cost his organization about $500,000 and still costs about $15,000 a month.

"To say I'm frustrated would be a significant understatement," he said.

Unique Application

University officials noted that the full ConnectND application is unique because its core ERP applications are also used by North Dakota state agencies. The ConnectND financial and human resources applications are housed in the state government data center in Bismarck, and the student management applications are hosted in facilities on the university system's Grand Forks campus.

ConnectND has cost the state an estimated $49 million — $14 million more than originally projected — and the implementation remains incomplete. Officials did not break out the cost of the university system's portion of the project but blamed problems with that piece for the cost overruns and delays.

State Rep. Bob Skarphol, a member of the state legislature's IT committee, said the ConnectND system was first projected to cost about $35 million, and the rollout was originally slated for completion two years ago.

AT A GLANCE

ConnectND

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"Obviously, we probably underestimated the costs," said Skarphol, who noted that he had expected a smoother rollout from an IT operation at an academic body.

He added that the state government's rollout of the PeopleSoft software has been mostly smooth.

The academic software modules, particularly a grants and contracts management application, also did not perform as expected and have required extensive customization, said Laura Glatt, vice chancellor of administrative affairs at the Bismarck-based university system.

"Things are not working as intended, but much of that is due to the fact we tried to implement too aggressively with too little resources," Glatt said.

The ConnectND project was launched in 2001, when PeopleSoft was selected to supply the ERP and academic software. The academic applications, many of which were Web-based, were to replace a set of legacy applications that included internally developed and mainframe-based packaged software, Glatt said.

The systemwide rollout of the PeopleSoft academic applications was started in April 2003, she said.

Glatt said she anticipates that the full rollout will be completed within 18 months. She noted that an academic progress application still needs refinement, the portal requires enhancement, and query and reporting capabilities must be expanded.

Glatt said university officials now cite the lack of an executive to oversee the project full time as a key reason for the implementation problems. "The major mistake from Day One was not to have a full-time project manager," she said.

The first full-time overseer of the project starts work this month along with a new systemwide CIO (see related story, below).

Meanwhile, state government users are pleased with the system, said Mike Ressler, deputy CIO for North Dakota.

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North Dakota University System Names Interim CIO

AS THE NORTH DAKOTA University System (NDUS) works to complete its troubled PeopleSoft implementation, its IT operation must prepare for a new CIO, who starts work today.

Last month, after seven years in the post, CIO Grant Crawford announced plans to resign in June to "pursue other professional opportunities," according to the NDUS.

"I came to North Dakota to make a difference," said Crawford via e-mail. "I did that. They've got a new library system, a new administrative system and a video network that has grown more than tenfold."

Crawford will be replaced on an interim basis by Randall Thursby, a managing partner of Thursby & Associates Inc., a technology consulting firm in Cochran, Ga. Thursby, a former CIO for the University System of Georgia, is slated to remain in the post until July 2008.

At the same time, Bonnie Neas, associate vice president for federal government relations in the NDUS, was named deputy CIO and executive manager for the troubled ConnectND program, an effort to implement PeopleSoft ERP and academic applications that has suffered through delays and cost overruns. Both Neas and Thursby will be based in the university system's Fargo IT facility.

An NDUS spokeswoman declined comment on the reason for Crawford's departure, except to say, "We appreciate his many contributions to the university system and wish him well."

Laura Glatt, NDUS vice chancellor for administrative affairs, acknowledged that the CIO's departure means a loss of knowledge but said a new manager can bring along fresh ideas that can be introduced into the troubled project.

"There are trade-offs both ways," Glatt said. "We acknowledge the flip side, that new folks have new ideas and a new approach. They might be looking at things a bit differently and bring new ideas to move us ahead more quickly."

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Continued from page 1

Cisco

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"My skeptical side wonders if this is a way to raise prices," said Robert Fort, director of IT at Virgin Entertainment Group Inc. "But on the other hand, I wonder if there is some opportunity here [for more pricing options] that I don't know about."

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"We've done very well [on pricing], but Cisco is the Cadillac of networking," Fort said. He added that he shares the widespread perception that users pay premium prices for the networking market leader's equipment and services.

However, using Cisco's products instead of rival offerings that aren't as well supported may result in a lower total cost of ownership in the long run, Fort said.

David Langford, vice president of technology at Smart City Holdings LLC in Lake Buena Vista, Fla., said he likely would be opposed to paying separate fees for Cisco's Internetworking Operating System (IOS) software and other products. "It depends on how they do it, but on the surface, I'm against it," he said.

Cisco's CHAMBERS: "We haven't charged for software with ongoing fees."

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Cisco lumps what it charges for much of its software into the cost of maintenance contracts, Chambers said, adding that the company should more precisely show customers what they're paying for.

"There will be some elements of our software strategy that will be bundled forever," he said. "There will be others that will evolve out, and we'll allow customers to choose what they want or don't want."

Chambers also said he thinks that the way Cisco treats software now is ironic, given that half of its engineers are software developers. He contrasted the company's approach with the ones taken by large software vendors.

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If the company does start charging separately for IOS or other technologies that are now bundled, some users who are behind on software upgrades could see their overall costs go up, Kerravala said. But, he added, costs could drop at some large Cisco shops that may now be paying more than they need to for technical support. ▪

Chambers Says Video Will Drive Big Boosts in Bandwidth Needs

LAS VEGAS

DURING HIS keynote speech at Cisco Networkers 2006, Cisco CEO John Chambers predicted a 200% increase in workloads on corporate networks over the next two years because of the increased use of video technology.

Chambers demonstrated how video of a baseball game could be captured from an IP network and viewed on room-size high-definition TVs. Companies will be able to use the same "telepresence" capabilities for meetings, telemedicine and other uses, he said. Cisco later this year plans to announce more details about new technology that will support video applications, according to a company spokesman.

How soon the vision sketched by Chambers will fully materialize was a matter of debate at the conference. Yankee Group analyst Zeus Kerravala said that the telepresence concept might not be widely adopted by corporate users for at least five years.

Said Brandon Buffin, a systems administrator at Ball Homes LLC in Lexington, Ky., "I'm using some video now, but [200%] is quite an increase in bandwidth, and that's hard to imagine."

But David Siles, chief technology officer for the government of Kane County, Ill., said he recently received requests from law enforcement officials who want to transmit live video and stored clips over wired and wireless connections. That would allow police officers at the scene of a crime to transmit images to supervisors in other locations or to other first responders, Siles said.

Kane County, which is located west of Chicago, is also contemplating the installation of a mesh wireless network that could be built within two years to help enable the transmission of video images. In addition, Siles said, some taxpayers are interested in having video streams of county board meetings available for playback on demand.

"I buy Cisco's case for video more now than in the past," said Forrester Research Inc. analyst Rob Whiteley. "Collaboration is what they're after, and for collaboration, video makes a huge difference."

– MATT HAMBLEN

EMC Plans to Bring Out Data Classification System

New technology will incorporate acquired software

BY SHARON FISHER

EMC Corp. late this year plans to ship data classification software that initially will work with unstructured information and eventually support databases as well, a company executive said last week.

George Symons, EMC's chief technology officer for information management, didn't divulge the details of how the data classification offering will be packaged. But he indicated that it would ship in the fourth quarter and include technology gained from EMC's acquisitions of vendors such as Legato Systems Inc., Documentum Inc. and Smarts Inc.

Data classification software lets storage administrators set up policies so that data is automatically categorized by its importance and then stored using a hierarchical storage management scheme. Critical data is assigned to high-end storage devices, and less important and infrequently accessed information is relegated to slower, cheaper storage.

Two EMC users said they are looking forward to the new functionality, despite the lack of specifics on how the storage vendor plans to offer it.

John Halamka, CIO at Harvard Medical School and CareGroup Healthcare System in Boston, said he believes that a data classification offering from EMC can help his organizations maximize their storage investments. Halamka said he plans to be an early adopter of the EMC technology.

Kenneth J. Kucera, CIO at First National Bank of Omaha, said the bank will likely evaluate the technology, which he called a logical corollary to its tiered storage architecture.

EMC's plan to develop data classification software was first disclosed to analysts earlier this month by CEO Joe Tucci. Symons said last week that the first version of the technology will focus on unstructured data such as text files, spreadsheets and PowerPoint presentations, as well as semistructured files such as e-mail.

Brian Babineau, an analyst at Enterprise Strategy Group Inc. in Milford, Mass., said EMC has all the pieces to create a data classification product but must now knit them together.

EMC already has a partner agreement with Arkivio Inc., a Mountain View, Calif., company that makes a data classification tool. But an EMC spokesman said the deal is unrelated to the company's internal development plans.

StoredIQ Corp., another data classification vendor, next week plans to announce a partnership agreement with EMC that's also unrelated to the latter's product plans, said Dave Davenport, CEO of the Austin-based start-up. ▪

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EC Sets Plans to Allow Continued Data Sharing

BRUSSELS

THE EUROPEAN COMMISSION last week detailed its strategy for letting airlines continue to share data about U.S.-bound passengers with the U.S. government, a move necessitated by a recent court ruling in Europe that invalidated an existing data-sharing agreement.

The EC proposed that the European Union's 25 member nations formally renounce the current deal by month's end and authorize the commission to negotiate a new, legally sound agreement with U.S. officials.

For the past two years, airlines flying from Europe have been required to share names, addresses and other passenger data with the U.S. government, which demanded the information following the terrorist attacks of Sept. 11, 2001. But the European Parliament challenged the May 2004 data-sharing agreement, and the European Court of Justice in Luxembourg ruled late last month that the deal was illegal on procedural grounds.

The court left the agreement in place until Sept. 30 to give the EC time to come up with a solution. The new plan excludes the European Parliament from the decision-making process, instead requiring approval directly by the EU's membership.

■ PAUL MELLER, IDG NEWS SERVICE

GLOBAL FACT

Percentage of all auto insurance bought online in South Korea last year. The online purchases amounted to $836 million.

Nokia, Siemens Agree To Merge Telecom Units

FRANKFURT

NOKIA CORP. and Siemens AG last week announced plans to merge their telecommunications infrastructure units into a joint venture called Nokia Siemens Networks.

Nokia and Siemens will each own half of the new company, which is expected to begin operating by year's end. At a press conference here, officials said the combined operations generated about €15.8 billion ($20 billion U.S.) in revenue last year. They hope the joint venture, to be based near Helsinki, Finland, will be better able to compete worldwide against emerging networking rivals based in Asia.

The two vendors projected that the merger will reduce annual costs by €1.5 billion ($1.9 billion U.S.), including savings from layoffs of up to 7,500 of the joint venture's 60,000 workers.

■ NANCY GOHRING AND STEVEN SCHWANKERT, IDG NEWS SERVICE

Auditors Call on NHS To Track IT Suppliers

LONDON

THE U.K.'S National Health Service should terminate and replace contractors that don't meet deadlines for its massive health care IT system upgrade, according to a government audit report released this month.

The recommendation from the National Audit Office reinforces efforts by the NHS to put pressure on contractors for prompt delivery of products and services for the National Programme for IT project, which is expected to cost £12.4 billion ($22.9 billion U.S.) and take 10 years to complete.

The NHS has warned that it will hold the prime contractors responsible for delays caused by subcontractors and that it won't pay suppliers until technology is delivered and the promised new services are working.

■ JEREMY KIRK, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

Philips Electronics NV has won a contract to supply its SpeechMagic speech-recognition system to the Danish parliament for use in providing fast Web access to transcripts of speeches. The technology will be integrated into the parliament's report-publishing systems and is expected to enable 85% of all speeches to be made available on the Internet within three hours of being delivered. Philips didn't disclose the contract's value.

■ JOHN BLAU, IDG NEWS SERVICE

Cognizant Technology Solutions Corp. last week announced plans to broadly expand its offshore services delivery operations in India, where the Teaneck, N.J.-based IT services firm has facilities in Chennai and six other cities. Cognizant said it will increase its workforce in India from 21,000 to 28,000 by the end of this year.

■ JOHN RIBEIRO, IDG NEWS SERVICE

Nokia last week said it plans to run its worldwide managed services business from India. Ashish Chowdhary, who currently leads Nokia's networks business group in India, will become head of the company's worldwide managed services operations by year's end, Nokia said.

■ JOHN RIBEIRO, IDG NEWS SERVICE

IBM Offers Prototype for Building 'Mashup' Apps

Exec: Technology creates Web-based custom apps from multiple sources

BY HEATHER HAVENSTEIN

IBM earlier this month brought out a prototype technology that uses Web services and wiki technology to quickly build customized "mashup" applications that can blend external information, like news feeds and weather reports, with enterprise content and services. IBM defines mashups as applications that use open technologies such as Asynchronous JavaScript and XML (AJAX), PHP scripting language and syndicated feeds to combine content from more than one source into a single application. In an interview with Computerworld *after the announcement,* **Red Smith**, *IBM's vice president of emerging Internet technologies, talked about the genesis of the prototype, called Enterprise Mashup, and how IBM expects to use the new technology.*

What are the business drivers behind creating the prototype of the Enterprise Mashup product? As the Internet keeps evolving, we keep hearing how customers want to leverage it to build these informational applications. They are very timely and topical. When a storm is coming up the coast, how will that affect your business? One customer said a major factor in their business is the weather. It was probably the second most important variable in their business, next to employees. They asked if we have a real-time weather service. We did a prototype for them based on their requirements that showed [how their stores] could use the mashup. You could use a Google map to click on a store to see weather conditions and also show inventory.

You need to be able to monitor things on a timely basis to make business decisions. Folks say these things would be really helpful, but they don't have any way to build them now. Applications like that have been too costly to build from an IT perspective.

How does the prototype technology work? It is like wiring the Web. It is more of an assembler. We started looking at Web-based data sources like weather, traffic and some that show building permits. With [Enterprise Mashup operating] inside a browser, you could see a palette of these Web components, and you just drag them on a wiki page. They automatically get the information and show it to you then and there. You've actually assembled it. It is not like traditional application development.

What is the technology behind the prototype? Web services. You wouldn't have this whole area of mashups if you didn't have [service-oriented architecture] as a backbone.

Then there is Web 2.0 technology like AJAX and syndication feeds. Someone can point to an RSS feed, and we will get it and put it in a format where they can put in one their [Web] pages. Underneath, we use some PHP technology and open-source wiki technology. It is immediate satisfaction as opposed to normal application development [processes].

When can IT use the Enterprise Mashup technology? As enterprise customers look at what is happening in the open-source world of mashup camps, they are describing these types of applications. Through their guidance, we will decide how we will incorporate this into future products. ▸

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DON TENNANT

Needing to Care

NOW THAT the conflagration around the Bill Gates torch-passing announcement has subsided, it's easier to make a hype-free assessment of whether we need to care. My conclusion is that we do. But not for any of the reasons that have been bandied about amid all the fireworks.

Five or 10 years from now, when observers assess the impact of Gates' departure from involvement in Microsoft's day-to-day operations, the transition will likely be cited as a key factor in whatever will have transpired to change Microsoft's fortunes between now and then. The connection may be legitimate. But it hardly will make a difference in anything that really matters.

Love or loathe Microsoft, it would be difficult to argue that the company hasn't been a huge contributor to positive change in our quality of life in the 31 years since its inception. Yet at this stage in Microsoft's corporate life, the change agent is no longer an individual or even a group of individuals. The change agent is an amalgam of the company, its partners and its users. So it's not what Gates has shifted his attention *from* that we need to care about. It's what he has shifted his attention *to*.

Anyone who has read about the transition since it was announced on June 15 knows that Gates is making the move so he can devote more time to the Bill & Melinda Gates Foundation. But there's been virtually no coverage of the significance of the foundation getting that boost. We've all been too busy looking at the significance of Microsoft having a founder who's less hands-on. That bespeaks a twisted perception of what's really at stake here.

Go to the foundation's Web site (*www.gatesfoundation.org*) and you'll find this in the mission statement: "Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to reduce inequities and improve lives around the world."

Why is it that we see this endeavor as less worthy of our attention than the strategic direction of a software company? Maybe it's because we've been inoculated against caring by self-proclaimed philanthropists whose fortunes were made in the IT industry and whose motives appear questionable. Oracle CEO Larry Ellison comes to mind.

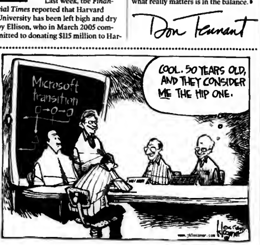
Last week, the *Financial Times* reported that Harvard University has been left high and dry by Ellison, who in March 2005 committed to donating $115 million to Harvard to establish the Ellison Institute for World Health. The *Times* reported that Ellison never paid up and that his advisers last fall began linking the payment to the final settlement of an insider trading lawsuit brought against Ellison by Oracle's shareholders. That settlement called for Ellison to donate $100 million to charity in Oracle's name.

Then there's Ellison's own nonprofit organization, the Ellison Medical Foundation. Go to its Web site (*www.ellisonfoundation.org*) and you'll find this in the mission statement:

"The Ellison Medical Foundation supports basic biomedical research on aging relevant to understanding aging processes and age-related diseases and disabilities." Leave it to Larry to set up a foundation that's searching for the Fountain of Youth. I can't be the only one who has a hunch that Larry isn't crazy about turning 63 in August.

However, we can't let any of that cause us to dismiss the significance and relevance of what Gates stands to accomplish by being more hands-on at his foundation. Yes, we need to care about the transition. Positive change in what really matters is in the balance.

Don Tennant



MICHAEL GARTENBERG

Near-Perfect Laptop Gets Even Better

I TRAVEL A LOT, logging more than 100,000 miles each year on planes. So I'm always in search of three things: a bulkhead aisle seat, a fruit plate and the best laptop for extensive travel. While I rarely get the first two items on my list, I have found what I think is the ultimate laptop for road warriors these days.

I've always liked the IBM ThinkPad X Series; it's been one of my favorite lines of laptops since I discovered the fabulous X40 a few years ago. It was hard for me to imagine how Lenovo (the company that bought IBM's PC business last year) could improve on what was already a pretty great product.

The answer is the new X60s notebook. I've been using one of the new machines for a while now, and I'm totally impressed by what has been added.

Taken individually, the additions may not seem like much, but added all together, the X60s becomes a whole new experience in mobile computing.

The X60s isn't the smallest, thinnest or most powerful notebook you can buy, but it is one of the most usable, especially when you're on the road a lot.

The keys to a product like this are attention to detail, and the balance of features with form — keeping things small and compact without compromising usability. At the end of a long day, every extra pound becomes a burden. With a slim design and a travel weight that's around 3 lb., the X60s is a dream machine to carry.

The X60s packs a new dual-core processor from Intel that's nice and speedy, running at 1.66 GHz. Add in a 100GB hard drive (my older, 40GB laptop was starting to feel really

COMPUTERWORLD

EXECUTIVE BRIEFINGS

EXECUTIVE GUIDES FOR STRATEGIC DECISION-MAKING

End-to-End Storage Security

Critical data doesn't just live on your hard drive anymore. Here's how to protect sensitive information and documents, whether they're stored on a network server or on a flash drive in an employee's pocket.

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STRATEGIC INSIGHTS FROM THE EDITORS OF COMPUTERWORLD

EXECUTIVE SUMMARY

Securing Storage, Wherever It Lives

STORED DATA is everywhere in the modern enterprise, from the disk drives on application and Web servers to the flash drive on a user's keychain. So are the threats to data, from amateur hackers to professional identity thieves who seek to compromise data in the form of customer records, product plans, intellectual property and other types of electronic documents.

Because of these increasing threats and stricter regulations imposing fines or other penalties for security breaches, storage security is now the concern of everyone from the board of directors to the product designer or sales rep creating a new piece of information. Their weapons in this fight range from network-based encryption hardware to content-scanning software and enterprise rights management (ERM) tools, which incorporate access rights and security settings into individual documents.

Rise of Encryption

To understand the need for storage security, look no further than the headlines blaring the latest case of stolen or lost backup tapes. One high-profile company after another has suffered these incidents, causing untold embarrassment and possible losses of customers. The result has been, not surprisingly, an upsurge in organizations encrypting backup tapes, so that even if a tape is lost or stolen, the information on it can't be used. Driven by demand, leading tape vendors have begun adding encryption capabilities to their backup software and their tape libraries.

It's not just data on backup tapes that's at risk. Any data stored on any storage medium is at risk, whether it's on a storage-area network, a server or an employee's notebook computer sitting in an airport.

Any data stored on any storage medium is at risk, whether it's on a storage-area network, a server or an employee's notebook computer sitting in an airport.

At the Dartmouth Medical School's Center for Evaluative Clinical Studies, operations director Vincent Fusca oversees nearly 7TB of raw medical data. While he says he doesn't know of any successful theft of that data, he's encrypting it to avoid a data breach that could cause the school to lose millions of dollars in research grants.

Encrypting data on servers, notebook computers and even flash drives requires extending encryption beyond the tape drive. On the server or the user's PC, this can be done through software that encrypts data before it moves to the network or to a storage device. It can also be done by appliances that sit on the network and encrypt the data as it moves from the server to the storage device or to another destination on the network.

However, polls show that most companies are still not encrypting most of their data. Their reasons include fears that encryption and decryption will slow application performance, that managing encryption keys will be complex and expensive, and that a lost decryption key (or the disappearance of a certain vendor or product from the market) will leave them with unreadable data.

Another obstacle is that various vendors apply encryption technologies differently, and data may have to be decrypted and then re-encrypted as it moves among different levels of storage. The decryption between, say, a backup device and a server creates a window of opportunity for the data to be compromised.

New encryption technology is easing some of these concerns, such as appliances that use specialized processors to encrypt data at close to wire speed (or the speed at which data flows through the network).

Greater industry adoption of encryption standards is easing fears that customer data will be marooned if one vendor's encryption technology goes out of style, and new technologies are making it easier to manage encryption keys. Some vendors even build encryption capabilities into notebook computers and flash drives that store sensitive data.

Protecting End Points

Other approaches prevent sensitive data from being downloaded to or being used on end points such as customer PCs or handheld devices.

Sophisticated management software can now lock down Universal Serial Bus ports or CD-ROM burners on client PCs to prevent them from transferring data to mobile devices. Some notebooks ship with biometric authentication to protect access to the device itself. A number of vendors offer a combination of software and services that protect data on stolen notebooks or handhelds by retrieving and erasing the data on them the next time the stolen device connects to the Internet.

Some newer technologies focus on the data itself, scanning content for sensitive terms and blocking the transmission of any information that should stay protected within the organization.

An emerging class of data-classification or information content management offerings promise to help set policies and access controls on sensitive data buried in unstructured data sets such as text documents and e-mail.

In the long-run, much of the storage security load might be carried by ERM software. This requires users to classify data as they create it, specifying its level of sensitivity and the type of access that can be allowed to it. With ERM, the level of encryption and the access rights provided to a document travel with the document as it moves across the network, or even outside of it to customer or business partners.

At least for the next few years, however, ERM acceptance will be held back by questions about broad application support, interoperability across ERM products from multiple vendors and slow response times as users outside the corporate network wait to be authenticated by the corporation's ERM system.

Finally, ERM — like virtually any storage protection technology — is only as good as the security policies on which it rests. For example, ERM requires clear, consistent and understandable data categories that reflect how an organization actually handles information.

Creating a security policy can be a daunting task because it requires an understanding of all the various types of information an organization stores and reaching agreement among all parties about how available, versus how secure, each type of data should be. This process requires cooperation from users and managers across the organization. It also requires managers to focus on creating policies that focus on the most important threats, are clearly understandable by all users and that are enforceable.

Ensuring end-to-end storage security sometimes requires finding and prosecuting hackers, or penalizing employees who didn't follow proper security policies. In those cases, security managers may need to understand general forensics rules such as handling the evidence as little as possible and establishing and maintaining a chain of custody, as well as computer-specific rules such as never examining the evidence on the same system that created it.

Given all these requirements, storage security can seem like an impossible task. But by starting with an analysis of the needs of the business, security managers can create policies that explain to every user what data is most crucial and most in need of protection. Only then is it possible to choose the right technology for each storage security requirement. ■

Dealing with the Paper Trail

We're living in an era in which compliance is forcing organizations to protect certain types of information and documents. At the same time, there are more and more ways for this data to leave the office – ranging from instant messaging to USB drives.

And then there's old-fashioned paper to consider. Dumpster diving, illicit copying and faxes are how paper-based information can get out of the office and into the wrong hands. However, there are technologies that can help organizations prevent the data from being printed out in the first place. They include permission-based printing and printing documents with watermarks and bar codes, in order to restrict and track the distribution of printed documents.

In Japan, the Bank of Nagoya is installing a system based on radio frequency identification (RFID) technology to help manage sensitive paper documents. Important documents will have embedded RFID tags, which can be read by omnidirectional antennas mounted on filing cabinets and other office equipment. While the system won't restrict the printing of documents, it will help track the location of important paper documents and manage inventory.

In the wake of recent headlines detailing the loss or theft of customer records and other files, security of enterprise data has emerged as a top concern of IT shops everywhere. This report discusses the primary security pain points in enterprise storage setups – including desktop computers, tape, and even portable USB drives – and explains strategies that IT managers can use to lock down sensitive data and documents. Also included in the report are articles about endpoint security, encryption, data classification and managing document access.

FREE DOWNLOAD: "End-to-End Storage Security" For a limited time, get this full report (a $195 value) for free, compliments of Sharp.

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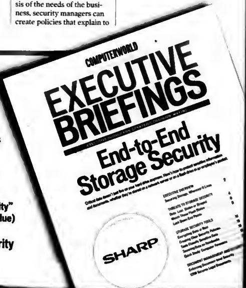

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If you don't take control of your data, someone else will.

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cramped if I wanted to keep video on the hard drive for airplane viewing), 802.11 a/b/g, Bluetooth and a biometric fingerprint reader to keep things secure, and you've got a pretty nice upgrade to the older X Series.

But what really makes the new X60s special is that it has integrated EV-DO. Yes, integrated, high-speed wireless Internet access has now made it down to the form factor that I love. It's broadband everywhere. Add in eight hours or more of battery life for working coast to coast (and up to 11 hours with an external battery), and you have a powerful computer that is pretty much ubiquitous.

The keyboard is full-size and lives up to the excellent ThinkPad heritage. Some other nice touches are an integrated LED that lights up over the keyboard — which makes it possible to work on a red-eye flight without disturbing seatmates — and an excellent set of tools that can help ease disaster recovery.

Is there a downside? Some folks might not like the fact that there's no integrated optical drive, but that's a feature I rarely use except when loading software. Lenovo does offer a docking station that lets you add an integrated optical drive, but it kind of kills the portability.

The 12-in. XGA screen is also a little small in these days of widescreen, high-resolution offerings, and the X60s lacks 3-D acceleration, but that's the price you pay for keeping it small. Lenovo also changed the power adapters on its new computers, so if you've invested in older ThinkPad accessories, you'll need to upgrade.

But those are quibbles. If you or anyone in your organization spends a lot of time on the road and wants to stay connected without carrying a huge burden, the X60s is worth a look. ▸

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www.computerworld.com/columns

READERS' LETTERS

Dangers of Blindly Seeking Revenue

IT APPEARS that Gartner is encouraging CIOs to join all the other executives on the revenue-generation bandwagon ["Gartner to CIOs: Think Business Development," *Computerworld.com*, May 16]. Two thoughts come to mind.

One, corporations should set revenue-generating strategies as part of a unified whole, not as a fire sale of whatever can be sold. Selling off customer information is a classic example of how a CIO can raise some quick money and land the corporation in long-term trouble.

Two, if a CIO has to constantly keep pulling rabbits out of his hat to survive, maybe the CIO function needs to be eliminated. Either there are obvious benefits that justify a senior role, or the role is a creation that has outlived its usefulness.

Prakash C. Rao
Vice president/chief architect,
Metadata Management Corp.,
Vienna, Va.,
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A Little Bit of Trust Goes a Long Way

I NODDED IN AGREEMENT as I read "To Manage the Smart Guys, Set Them Free" [Security Manager's Journal, May 22]. I've found that letting your employees know that you trust them to come up with a solution often sparks their creativity (and fosters trust).

It's amazing how often I've seen a glimmer appear in their eyes when I've said, "You're the specialist – that's the position you were hired for. Tell me what *you* think is the best solution."

Mike Aragona
Team leader,
systems development, Montreal,
aragona@savageland.com

THIS IS the exact approach I take with my staff of eight highly skilled and talented employees. I'm so glad that there are other managers out there with similar principles and ideas.

Lea Deesing
Enterprise systems administrator,
Yucaipa, Calif.,
deesing@verizon.net

C.J. KELLY'S article really hit home with me, as this is also my philosophy for leading software developers. I'm curious, though, whether senior managers ever question the value it provides.

They see your team solving problems and getting things done but wonder how much you contribute to the results. I've found it difficult to quantify or explain the value in managing this way.

Craig Harris
Systems development manager,
First Horizon National Corp.,
Irving, Texas

User Needs Should Be No. 1 Concern

IN THE ARTICLE "Developer Takes Hits From Open-source Backers" [News, May 15], Louis Suarez-Potts, manager of OpenOffice.org's community council, says, "I see anything that extends the life of Microsoft Office as problematic." This type of thinking is one reason the OpenDocument format will have challenges. Not only is this attitude unreasonable and unrealistic, it's almost childish. And that has no place in business.

I'm a developer too, and I am passionate about what I do. But that passion takes a back seat to user needs. Unless developers truly understand their reason for being, they will have trouble with user acceptance.

Ed Chavez
San Francisco

Corel Remains Under Microsoft's Thumb

HAVING LAMENTED Corel's "meek surrender to Microsoft" over the OpenDocument format, Don Tennant might now know how I felt when Corel abandoned what I considered to be the only Linux distribution that had a chance to compete in the marketplace, due to its high compatibility with Windows ["As the Timid Turn," March 6].

I had been very pleasantly surprised that Corel Linux networked seamlessly with my Windows network, with less setup than there would have been if the system was running Windows file and printer sharing. It was much easier to set up than the equivalent Red Hat or Mandrake distributions of the time.

The File Manager was excellent. It was much better, in my opinion, than anything in the KDE or GNOME environments, and it even had a fully functional Network Neighborhood equivalent.

Once the free (at the time) WordPerfect 6 for Linux was installed, you had the beginnings of a real competitor to Windows 2000. Corel Linux 1.2 (or Second Edition, as it was known) even had wizards to transfer user profiles from Windows to Linux.

Then along comes Microsoft with its $135 million investment in Corel, and the next thing you know, no more Corel Linux. It's hard not to think that this was a strategic move to stave off the inevitable adoption of desktop Linux by eliminating the most promising candidate.

Since then, I have thought of Corel not so much as a company, but as a pawn being played by Microsoft in whatever way will benefit it.

John Kozura IV
Information systems manager,
Ponder, Texas,
johnkozuraiv@netscape.net

SSNs at Heart of ID Theft Problem

IT IS OBVIOUS to any casual observer that Social Security numbers are at the heart of both identity theft and day-to-day commerce in the U.S. ["Congress Eyes Restrictions on Use of Social Security Numbers," *Computerworld.com*, May 15].

As the single unique identifier in this country, SSNs are used for every application, from employee ID numbers to tax reporting.

Limiting the use of SSNs for identification would reduce the threat of their theft. A privately held credit and tax number, such as other countries have, could be used for more sensitive things. Other countries have multiple identifiers, some private and some public. Brazilians make use of nine different government numbers.

An additional safe identifier in this country would speak more to protecting citizens than it does of Big Brother.

Bill Schaumann
Consultant,
Detroit

THE SSN identifies our account with the federal government. It should be used only for tax and Social Security reporting along with retirement transactions. It should not be used for commercial activities or driver's licenses. Instead, let each state issue an ID card that can provide a commercial, public ID number. This would give citizens a choice regarding participation.

G. Milton Bulloch, CPA
Vice president of finance
and operations,
AM Appliance Group Inc.,
Richardson, Texas,
miltonbulloch@
amappliancegroup.com

Unix at Apple's Core

APPLE HAS done such a good job of hiding it that people tend to forget that Mac OS X is really Unix with fancy clothes on ["The End of Unix?" Editorial, May 15].

Mike Alexander
Ann Arbor, Mich.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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JOHNNY C. WHITE
CIO
Florida Guardian ad Litem Program

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MDA
Model Driven Architecture is a method of writing specifications using platform-independent system models in the software development process. **PAGE 32**

SECURITY MANAGER'S JOURNAL
You Can Never Be Too Thin or Too Secure
C.J. Kelly takes inventory of what has been done to secure her state agency's network and assesses what still lies ahead. **PAGE 33**

OPINION
E-mail Insecurity in A Litigious Society
E-mail security is something no one can afford to overlook, and encrypting messages should no longer be optional, says Douglas Schweitzer. **PAGE 34**

urry fast mov
begin start go loa
and analyze
nds and react

ENRICO VARRASSO

By Robert L. Mitchell

AT INVESTMENT management firm Bridgewater Associates Inc., access to real-time data is measured in market ticks. Data feeds containing quote and trade activity are expected to stream in at 124,000 messages per second this year, so even subsecond delays in the arrival of data can affect trading decisions and put the Westport, Conn.-based organization at a disadvantage.

Monitoring high volumes of data that have very low latency requirements is beyond the capabilities of transactional databases, which must write each transaction to disk, so financial services firms traditionally build their own custom applications to keep up.

"There is a lot of effort required to build a framework that could perform and deal with lots of data concurrently," says Ed Thieberger, head of training technology at Bridgewater.

Recently, however, Bridgewater and other financial services firms have found an alternative in stream processing tools. Stream processing software goes by a variety of names, including streaming databases and event stream processing. The technology includes an engine that monitors data as it flows into and out of databases and other applications and can easily tap into external data feeds or internal message queues. All the data the engine gathers is held in memory to speed processing.

With data volumes increasing, organizations are running out of options for real-time processing. Financial services firms have little choice but to pursue stream processing because data quantities are starting to outstrip the capabilities of even custom-developed tools.

"At these volumes, traditional techniques won't scale," says Mike Stonebreaker, cofounder and chief technology officer at Lexington, Mass.-based StreamBase Systems Inc.

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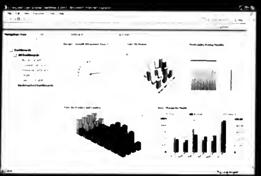

Celequest's Performance Dashboard

Bridgewater's custom C++ program could handle 18,000 messages per second — more than the 900 a relational database could support, but far short of the data volumes it faces this year. In contrast, the StreamBase engine handles 140,000 messages per second, Stonebreaker says.

Having gained a following in financial services, the emerging technology is beginning to spread to other industries that need to monitor operational data and interpret and respond to events in real time. Businesses are using it in areas as diverse as compliance management, network monitoring and real-time fraud detection in telecommunications, retail and e-commerce.

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He measures the success of stream processing both in reduced development costs and faster time to market. "We haven't had to build a framework that does what StreamBase does," he says. In addition, once StreamBase is pointed at the data streams to be measured, business analysts can construct queries using a drag-and-drop user interface rather than rely on programmers, Thieberger says.

Stream processing also matches up well with another emerging technology: radio frequency identification. "Streaming is the only technology that can handle large volumes of RFID data that need to be analyzed on the fly," says Diaz Nesamoney, founder and CEO of Celequest Corp., a business intelligence tool vendor in Redwood City, Calif.

The challenge with RFID tags is that they broadcast the same data continuously, says Jan Vink, IT director at Boekhandels Group Nederland BV, a Hauten, Netherlands-based chain of 42 bookstores. When a pilot bookstore recently began checking in more than 1,200 books per day using RFID tags and a tag reader "tunnel," Vink used Progress Software Corp.'s Apama tool to filter out the repetitive messages and ensure that each book was received in the system just once. The 45 to 50 boxes a day the store receives now take a total of 125 seconds for incoming processing rather than the 125 minutes required before, says Vink.

The toughest part of the project wasn't the technology, however. "It was new for us to work with event streaming," he says. "We were used to batch processing."

Moving Target

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Continued on page 29

DIAGEO PLC in London has been using stream processing software and a dashboard provided by SeeWhy Software for the past two years to track the status of shipments of Guinness beer to the U.S. Previously, shipments arrived from the factory to the port of departure in England with a nearly 100% on-time rating, but only 50% of shipments that left that port arrived at the U.S. warehouse on schedule.

Andy Cullen, head of supply chain planning and exports, brought in SeeWhy, which pulls shipping data from the company's SAP system, gets "in flight" updates from shippers' Web sites and streams in historical information on the shipper, seasonal factors, routes and other criteria to update the status and predict whether each shipment will be on time. It also continually updates the current overall on-time rating and predicts what the month-end number will be.

Cullen can drill down by carrier or destination to see why shipments are running behind schedule. When the lowest-cost shipper is the slowest, analysts must decide whether it's more cost-effective to use a faster shipper or expand inventory in the U.S. warehouse as a supply buffer.

But some decisions are easier to make. For example, Cullen discovered that some higher-cost shippers were also slower than less-expensive competitors. "We've found ways of driving [the percentage of on-time shipments] from 50% to 80% this month, and we're consistently above 70%," he says.

Cullen says organizations that want to try stream processing technology should have a clearly defined problem in mind and start small. Although Diageo now wants to expand the use of the technology to its other business units, Cullen says solving a problem at the departmental level first and working with a start-up like SeeWhy allowed his organization to be more nimble. "If we'd both been huge companies, it would have been very difficult to get this project going," he says.

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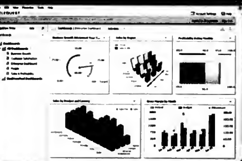

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– ROBERT L. MITCHELL

Bill Hilf and Boyd Davis

From: Bill Hilf (Microsoft) and Boyd Davis (Intel)
Sent: May 1, 2006, 2:51 PM
To: Information Technology Professionals
Subject: Windows Server 2003 and Intel 64-bit Servers: The industry standard for mission-critical applications

We are at the rise of the fourth great era in enterprise computing. First there were mainframes which offered companies the benefits of time sharing computing. Next came the era of mini-computers, which allowed more companies to own their own lower cost but proprietary systems. UNIX then went further by providing a level of compatibility at the operating system level, but still used vendor specific hardware platforms. However, all of these platforms came up short in the areas of cross vendor compatibility, price for performance, and their ability to keep pace with technology innovation. Intel® architecture–based servers running Microsoft® Windows Server™ have blossomed over the last decade by combining the benefits of the previous eras, while addressing the shortcomings of previous platforms.

As a result, the combination of Windows Server 2003 and Intel® Itanium® 2 processor–based 64-bit servers gives customers a cost-effective, robust solution for mission-critical applications. Microsoft and Intel have worked together for several years on this enterprise-class server solution, and have optimized it for running the most demanding enterprise workloads, which include transaction processing, data mining, business intelligence (BI), ERP applications, and extreme-scale high performance computing. This year marks an inflection point when 64-bit capable Intel server platforms will represent the majority of Intel platform shipments.

This combination has additional benefits, especially for users looking to replace aging RISC-based UNIX systems.

- The Intel® Itanium® 2 micro architecture is a native 64-bit platform.

- Windows Server 2003 on Itanium-based systems provides scalability and reliability to rival established UNIX systems.

- Intel® Itanium® 2–based servers running Windows Server 2003 offer many of the same capabilities and features as UNIX.

- Virtually all UNIX-based commercial applications also run on the Microsoft and Intel platform.

Additionally, Microsoft has just launched Windows Server 2003 R2 x 64 Edition for Intel® 64-bit Xeon processor–based servers. These systems now include the ability to natively run custom 32- and 64-bit UNIX applications and scripts, share files with UNIX systems, and provide centralized identity and security services for UNIX systems.

However, what really differentiates an Intel platform running Windows Server 2003 is what you get beyond what RISC UNIX can provide. A Microsoft and Intel platform offers substantially more functionality for lower cost, broader vendor choice for innovative solutions, and reduced complexity.

At Intel and Microsoft, we have worked hard to make the combination of Windows Server 2003 and Itanium 2–based servers the most compelling mission-critical platform to date. We have also created new technologies and programs to make the transition from UNIX as easy as possible. We invite you to review the following pages to learn more about how our solutions have enabled CompUSA, Rayovac, and others to transition to the higher value, lower cost Microsoft and Intel mission-critical platform.

Bill Hilf
General Manager
Microsoft's Platform Strategy Group

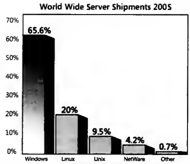
Boyd Davis
General Manager
Intel's Server Platforms Group Marketing

The Enterprise Computing Revolution

In the 1990s, Windows® running on Intel architecture computers was widely used for business desktop computing. A broad market emerged for Windows-based Intel architecture systems with a diverse selection of hardware and software solutions. Microsoft and Intel recognized an opportunity to carry the success and affordability of "PC economics" to customers in the server world. Over the last decade, the Microsoft and Intel ecosystem has grown to offer customers a greater choice of hardware and software solutions, compatibility across systems, and enterprise class reliability and performance—all at a much lower cost than UNIX.

With the broad range of 32-bit and 64-bit processor offerings from Intel, Windows Server solutions can address any mission-critical workload.

Driven by this new hardware/software standard, over 65% of new servers now ship with Windows Server on Intel architecture hardware, according to IDC.[1]



Source: IDC Quarterly Server Tracker, February 2006

Windows Server 2003 and Intel 64-bit Servers: An Industry Standard for Mission-Critical Computing.

Customers considering the Microsoft and Intel platform for traditional UNIX workloads are typically looking for comparable enterprise abilities and compatibility with existing applications.

Enterprise Abilities

"Enterprise abilities" refer to essential enterprise capabilities such as scalability and reliability. To address these requirements, Intel starts with the 64-bit EPIC (Explicitly Parallel Instruction Computing) technology—the cornerstone of the Intel Itanium architecture. EPIC provides 1024 terabytes of memory addressability and advanced parallelism capabilities to address current and future scalability requirements of high-end enterprise workloads.

> **"Based on our primary research, Windows Server was the leading platform for UNIX migration with 45% of the voluma. The Windows Server platform today has more ISV packaged application support and market coverage from ISV suppliers than the Linux platform does. As a result, IDC believes that it is unrealistic to expect that Linux can tackle tha full range of UNIX workloads today."**
> ***Understanding UNIX Migration: A Demand-Side View***
> ***January 2006***
>
> **– Matt Eastwood, Vice President, Enterprise Services, IDC**

Microsoft Windows Server 2003 has been designed to optimize both 32-bit and 64-bit architectures and can achieve record breaking performance in both scale-out and scale-up solution architectures.

Windows Server 2003 running on an Intel Itanium processor system has long been one of the highest performance systems listed in the industry-recognized TPC-C benchmarks.[2] In partnership with dozens of enterprise providers such as HP, IBM, Fujitsu, NEC, and Unisys, server platforms ranging from single processor rack-mount systems to multi-processor mainframes allow customers to achieve scalability to meet any mission-critical need with the flexibility they demand.

Intel® Itanium® 2 processors also include state-of-the-art enterprise reliability features such as advanced hardware error correction and recovery, machine check architecture, and PCI Hot Plug. In addition, Windows Server supports features such as failover clustering, hotswap components, and RAID subsystems, enabling customers to achieve levels of availability surpassing even the most established legacy systems.

Microsoft and Intel solutions can not only meet but exceed the enterprise abilities of existing UNIX solutions.

Enterprise Application Compatibility

Many of the applications that customers have traditionally run on UNIX systems—such as Oracle, SAP, PeopleSoft, and J2EE solutions—are now more often deployed on Windows Server. SAP ships over 65% of their products on Windows and Intel server platforms.[3] Even Oracle, once thought of as the database of choice for UNIX systems, now sells more databases on Windows Server than any other platform.[2]

When customers need to develop their own mission-critical enterprise applications, Microsoft's Visual Studio® and Intel's software development tools can be used to rapidly build highly-scalable applications running on the Microsoft .NET platform. Based on a recent study conducted by IDC, the Windows .NET platform is now the most popular platform for mission-critical applications running inside companies—even more popular than Java.[3]

> **"Microsoft's Windows Server operating system and servers using Intel's high-end processors have progressed to the point at which they can now satisfy the most demanding needs in terms of scalability and reliability. As a result, users in enterprise and datacenter environments have the option of benefiting from the volume price points and a choice of hardware suppliers enabled by industry-standard performance or uptime."** ***Migrating Business-Critical Applications from UNIX to Windows and Itanium 2–based Servers – January 2006***
>
> **– Tony Iams, Ideas International**

New features for customers coming from UNIX

Customers want to leverage their investments in existing custom application code, cut down their project implementation cycles, and ensure interoperability with existing IT infrastructure and corporate data. In response to these demands, Microsoft has developed a portfolio of UNIX interoperability solutions and now includes these with Windows Server 2003 R2, the latest release in Microsoft's server family.[4] For customers, this means:

- Active Directory® can now be used to extend centralized identity management to UNIX users
- UNIX and Windows users can easily share files using NFS
- UNIX scripts and custom application code can run natively on Windows using the Microsoft subsystem for UNIX-based applications
- Developers can breathe new life into UNIX applications by extending them to take full advantage of Visual Studio, Windows, and .NET interfaces.

Doing more with less = increased business value

Companies are faced with shrinking IT budgets and staff, while having to support an ever-growing reliance on technology. New technology solutions must provide rapid benefits for business in the form of increased productivity and cost savings. The Microsoft and Intel server platform provides a clear advantage in the areas of total cost of acquisition and ownership.

> **"When we compared the TCO of Windows Server 2003 to Linux, we found a 20% cost differential in Microsoft's favor, and in this industry, in today's business climate, 20% is very significant. It's huge."**
>
> **– Keith Morrow, CIO, 7-Eleven**

When it comes time to upgrade aging technology solutions, Windows Server running with Intel processors is a low risk, long term solution. Most existing applications can run on 64-bit Windows platforms, enabling you to leverage existing investments in applications, people, and systems. Now you can not only host these solutions on a lower cost platform—your applications can be extended to take advantage of key emerging areas such as collaboration, Web services, and mobility.

In the past, as enterprise systems have evolved to achieve higher levels of scalability and functionality, the complexity of the systems and management costs have also typically increased. To address this, Windows Server 2003 starts with built-in enterprise services such as directory services, Web services, and transaction services. Other integrated products in the Windows Server System™ family such as SQL Server,™ Exchange Server, and BizTalk® Server can be easily added to meet your requirements. The platform is then enhanced by products and services from thousands of partners from around the world. Since these solutions are designed around a common architecture, management complexity is reduced which improves your bottom line. Management is further simplified with the availability of over 750,000 certified Microsoft professionals.

Based on a report from Management Insight, 77% of solution providers who were polled chose Windows Server as the platform they preferred to use for building solutions for their customers.

> **"The Itanium ISV's ecosystem grew from 3,000 applications in January 2005 to more than 5,000 in August and continues to grow at similar run rate, a clear indication of the strong endorsement by the software community of Itanium servers' capacities."**
>
> ***IDC White Paper Sponsored by HP, "End Users' Feedback: Transform IT and Increase Business Performance Through Itanium based Standardization," August 2005***

intel | Microsoft

"By choosing Windows over Linux for our new SAP solution, we'll save an estimated $1 million in costs over the first four years. We needed performance, security, and reliability at a reasonable price, and Linux would have presented greater risk in all those areas. I need a proven IT environment that I'm sure we can support."

– Rick Dempsey, Chief Information Officer, Rayovac

RAYOVAC

Rayovac goes with Intel Itanium 2 Processors and Microsoft Windows Server System to meet their goals.

When Rayovac evaluated new platforms for modernizing their HP-UX based SAP system, its goals were to reduce costs and increase reliability, performance, and security.

Rayovac chose a Unisys ES7000 server with Intel® Itanium® 2 processors running Windows Server System products When compared to an alternative solution running Linux and Oracle, the Microsoft and Intel solution was found to have major advantages

- **Lower total cost of ownership.** Rayovac expects to save almost $1 million in software, staffing, and support costs over a four year period with the Microsoft and Intel solution
- **Better reliability and security.** Since the solution went live, Rayovac has experienced no unscheduled downtime Rayovac used existing procedures for managing the solution and was able to address their security compliance needs
- **Reduced risk.** Selecting proven solutions and established partners meant less potential for problems in the future In addition, Microsoft provides strong indemnification protection against potential intellectual property claims

With help from a trusted Microsoft partner, Rayovac was able to build a new solution that met all of their requirements

Taking the next step

The time to move to Windows Server and Intel 64-bit technology is here This year a majority of the processors shipped by Intel will be 64-bit capable Microsoft Windows Server 2003 is the platform of choice—outselling all other server platforms combined by a factor of almost 2 to 1 Windows Server on Intel® Itanium® 2–based server platforms offers unparalleled benefits in the form of lower costs, rock-solid reliability better scalability, faster time to market, and access to the largest business solution ecosystem on the planet

"CompUSA's vision is to be able to scale our data warehouse to support our ongoing growth. The Itanium 2 micro architecture allows us to get there—to scale up to 8-way, 16-way, and in the future, to 32- and 64-way servers. As a result of the Itanium 2 processor–based HP Integrity server solution, running Microsoft SQL Server on Microsoft Windows Server 2003, we have seen tremendous performance improvement on several processes associated with our data warehouse."

– Cathy Witt, Chief Information Officer, CompUSA

COMPUSA

We got it. We get it.

For more information and to find out if you qualify for a free Assessment Workshop, visit www.migrationforunix.com

IDC Server Workloads 2005 Model A Windows powered HP Superdome running 64 Itanium processors is currently benchmarked at running over a million transactions per minute using the TPC C benchmark SAP sales information • IDC Server Workloads 2005 Model—Database Segmentation Oracle shipments in 2004 Windows 41% UNIX 37% Linux 22% IDC 2005 Mission Critical Survey Question What software application platforms do your company s mission-critical applications currently run on? Microsoft NET scored highest with 35 7% followed by J2EE or other Java with 25 3% Mainframe with 16 8% other Microsoft platforms with 16 2% UNIX HP Solaris AIX with 7 1% and Oracle with 6 4% Because the features in the latest R2 release of Windows Server 2003 apply to workloads targeted for different environments, no R2 version of Windows Server 2003 for Itanium based systems is planned

The information contained in this document represents the current views of Microsoft Corporation and Intel Corporation on the issues discussed as of the date of publication Because Microsoft and Intel must respond to changing market conditions it should not be interpreted to be a commitment on the part of Microsoft or Intel and Microsoft and Intel cannot guarantee the accuracy of any information presented after the date of publication Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests Any difference in system hardware or software design or configuration may affect actual performance Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing For more information on performance tests and on the performance of Intel products visit http //www intel com/performance/resources/limits htm or call (U S) 1 800-628 8686 or 1-916-356-3104

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intel Itanium 2 | Windows Server 2003

AT A GLANCE

What it does

Stream processing software monitors and analyzes operational data flows in real time to detect predetermined conditions or events.

Can handle very large volumes of streaming data with very low latency requirements.

Faster than custom-built applications.

Integrates well with service-oriented architectures.

Most applications are still in financial services.

Products are relatively new and still maturing.

Analysts expect a vendor shakeup in the next two years.

Capabilities may eventually be embedded within existing tools such as databases and business activity monitoring.

Applications that require fast detection of and reaction to business events embedded in large volumes of data, such as fraud detection, network monitoring or transaction monitoring.

Continued from page 24

vendors were spawned from those academic exercises. For example, Stonebreaker is both an adjunct professor of computer science at MIT and CTO at StreamBase. And Celequest worked with researchers at Stanford in developing its product.

Most players in the market are small, and the technology is still maturing. says Philip Howard, an analyst at Bloor Research in Towcester, England. "None of the big boys have entered this space yet," he says, but that's changing.

Many of the start-ups have only a few customers today, says Gavin Little-Gill, an analyst at TowerGroup in Needham, Mass. He expects many of the vendors to disappear over the next two years as the market consolidates, new vendors jump in and stream processing capabilities are integrated into databases and other tools.

"A bunch of these guys are going to get gobbled up by the Oracles and Microsofts of the world," Little-Gill says.

Already, Tibco Software Inc. has launched its own product, Business Events, and Progress Software Corp. acquired start-up Apama Inc. last year. IBM is working on two CEP projects: one called Active Middleware Technology and another, from its Tivoli Software group, called Active Correlation Technology.

In addition to using stream processing to detect and react to events, some tools also feed real-time updates to a dashboard. "If there's anything that's driving this, it's dashboards," says Rogge.

Going Beyond BAM

At first blush, the dashboards presented by stream processing tonls sound a lot like business activity monitoring (BAM) tools, but the latter lack the ability to analyze data and perform event processing, says Jeff Wooton, vice president of product strategy at Aleri Labs, a Chicago-based vendor of stream processing technology. Nonetheless, he sees the two areas converging. "Either BAM products will make use of event-processing products, or they will start competing with them," he predicts.

Maja Tibbling, lead enterprise architect at Con-way Inc. in San Mateo, Calif., says that unlike BAM tools, stream processing can measure what is not happening, which she says is just as important as knowing what is happening. The transportation company uses Tibco's BusinessEvents to track and plan pickups and deliveries and the activities of inbound and outbound trucks to ensure that transportation planners are working with the most up-to-date information.

"In out rules engine, we need to know who cares about [an event] and how long they are allowed not to get [the information]. You can always figure out if something has happened. That absence of events is what's difficult to capture," Tibbling says.

Con-way recently moved toward an SOA as part of an effort to better integrate its systems, and BusinessEventa plays a key role in monitoring some 8 million events a day on the company's enterprise service bus. Events are published on the ESB, where processes that need to know about specific events can subscribe to them in parallel. "All of them, not just one stream, need to complete within a two-minute service-level agreement. If one doesn't complete, we need to know which one," Tibbling says. BusinessEvents triggers that.

Cendant Corp. is deploying Celequest's Analytics Server to keep up with hotel reservation requests coming in from channel partners such as Orbitz LLC. "We wanted to know exactly what was happening with the business in real time," says Nick Forte, directot of application architecture. With more than 6,500 hotels to book, Cendant's systems handle up to 500 transactions per second during peak times through various channels. Forte uses dashboards to monitor activity. Having an ESB architecture facilitated integrating the tool with data streams. "An ESB makes it much easier to pluck that information off and look at it," says Forte.

With the system set up on one channel, Cendant has already seen a benefit. During initial testing, the tool revealed that a few-hundred-thousand tate plans had no inventory allocated to them. As a result, requests against those plans received an error code. "We kept telling them the product is not available," says Forte — a costly error. The dashboard picked up on the problem, allowing staffers to quickly remedy it and limit a potentially large loss of revenue.

The next step will be to expand the system to all of Cendant's channels, Forte says. He also hopes to use the system to automate yield management. "If we see occupancy rates going up on a property, we might want to trigger an event to send rates higher by some percentage," he says.

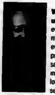
Forte describes stream processing and Cendant's move to an SOA as the first steps toward a more proactive approach to operations. "The wave of the future is predictive modeling," he says. But that's in the future. Right now, Forte says, "we're trying to get all of the plumbing into place."

The biggest challenge to stream processing may not be the technology but the change in mind-set that's required to effectively use the tools. "The barrier is changing the way you think about the problem," says Tibbling. "In this case, it's how you think about business problems in multiple dimensions. How do you externalize what your brain does automatically? To put that in software is a difficult matter." ■

David Luckham is research professor emeritus of electrical engineering at Stanford University. His work in complex event processing helped spur the development of today's stream processing tools. He consults on complex event processing, is the author of the book *The Power of Events* (Addison-Wesley Professional, 2002) and hosts the Complex Event Processing Web site at *www.complexevents.com*. He spoke with *Computerworld*'s Robert L. Mitchell about how the concepts behind CEP have evolved into today's stream processing products.

What problem was CEP designed to solve? CEP was developed from 1989 to 1995 to analyze event-driven simulations of distributed systems containing both hardware and software. Since then, it's been used by researchers to analyze various systems, including industry standards in manufacturing and telecommunications, for example. In 1995, I got the idea that you could apply the CEP analysis system to events that were created in any kind of events system. So we decoupled it from the simulator and started applying it to the commercial middleware that had grown up by that time.

How is event stream processing different from CEP? Event stream processing is focused more on high-speed querying of data in streams of events and applying mathematical algorithms to the event data. The first commercial applications were to stock-market feeds in financial systems and algorithmic trading. CEP is focused more on extracting information from clouds of events created in enterprise IT and business systems. CEP detects patterns of events, abstracts and simplifies information in the patterns, and supports making management decisions.



What do stream processing products not do well? Very few of the event-processing products of the moment use any relationships between events other than timing. Why is one process putting a set of products on sale and another retail process applying [a second] promotional discount lowering the price of that very same set of products? They're not coordinating properly. I want to understand why my processes are not communicating when they should. Or I've got a trading process or set of trading processes, and they keep on timing out. Why is that?

When you get into these problems of business process design, you have to understand how events are related. You have to look at more than just the data in the stream of the event. You have to look at what caused different events to happen.

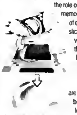
Geek's

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

Semiconductor Brain: Nerve Tissue Interfaced With a Computer Chip

IN A PIONEERING DEVELOPMENT, scientists at the Max Planck Institute for Biochemistry in Martinsried, Germany, have coupled living brain tissue to a chip equivalent to the processors that run computers.

Before information perceived by the mammalian brain is stored in long-term memory, it is temporarily placed in the hippocampus. Understanding the role of the hippocampus in the memory process is a major topic of current brain research. Thin slices of this brain region provide the material to study the neural network of the hippocampus.



A thin tissue slice of a rat's hippocampus region (top) is cultivated on a semiconductor chip. The chip maps the electrical activity of the neurons (bottom), caused by activity of synapses.

Imaging methods commonly used in neurophysiology are invasive are restricted to a small number of cells or suffer from low spatial resolution. The scientists at Martinsried, led by Peter Fromher have developed a noninvasive technique that enables them to record neural communication among thousands of nerve cells in the tissue of a brain slice and create an image with high spatial resolution. The technique involves culturing thin slices of the hippocampus region on semiconductor chips. The chips, developed in collaboration with Munich-based Infineon Technologies AG, have a density of 16,384 transistors on an area of 1 square millimeter.

Recording the activity patterns of the united cell structure of intact mammalian brain tissue is a significant technological breakthrough. Employing the new technique, the biophysicists were able to visualize the influence of pharmaceutical compounds on the neural network, making the Max Planck Institute's "brain chip" a novel test system for brain and drug research.

As early as 1991, Fromherz and his co-workers succeeded in interfacing a single leech nerve cell with a semiconductor chip. Subsequent research gave rise to bidirectional communication between a chip and small networks of molluscan nerve cells. In the current project, it was possible to detect the signaling between cells via their synapses. The chips used in these studies were developed by the scientists themselves, with production assistance from private industry.

GROVES OF ACADEME

Cyberuniverse Matches Astronomical Observations in Fine Detail

SCIENTISTS AT THE University of Chicago have bolstered the case for a popular scenario of the big-bang theory that explains the arrangement of galaxies throughout the universe. Their supercomputer simulation shows how dark matter, an invisible material of unknown composition, herded luminous matter in the universe from its initial smooth state into the web of galaxies and galaxy clusters that populate the universe.

IMAGE COURTESY OF ANDREY KRAVTSOV

Previous studies by other researchers had already verified the main features of this cold dark-matter model. The Chicago team extended this work by comparing the results of its supercomputer simulations to the newest, most detailed astronomical observations available.

Simulations that the team led by Andrey Kravtsov, an associate professor of astronomy and astrophysics, conducted two years ago had predicted that galaxies of different luminosity or brightness clustered differently when the universe was young than they do today. The team's research verifies that prediction and shows that similar differences appear in the recent data. "In the early stages of evolution of the universe, each galaxy has a high probability of having a close neighbor of similar luminosity," Kravtsov said.

The data that Kravtsov's team compared to its simulations came from the Deep Extragalactic Evolutionary Probe 2 (DEEP2) survey and from the Sloan Digital Sky Survey. Using Keck 10-meter telescopes in Hawaii, DEEP2 made detailed observations of how galaxies were clustered 7 billion years ago, when the universe was approximately half its current age. The Sloan survey, meanwhile, provided additional data regarding galaxy clustering from more recent epochs.

The Chicago scientists based their supercomputer simulations on the assumption that galaxies form in the center of dark-matter halos. These halos provide a central location where normal matter consisting of hydrogen, helium and small amounts of heavier elements would collect in gaseous form. Once this gas had cooled and condensed, it achieved sufficient density for star formation to begin.

The distribution of galaxies in the Chicago team's cyberuniverse matched the real one "extremely well," Kravtsov said. "It wasn't guaranteed that it would actually work so well in reproducing the data."

DIFFERENCE ENGINES

Memex Forges An Early Link

IN A 1945

TIME
Vannevar Bush

Geek's Garden

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

Semiconductor Brain: Nerve Tissue Interfaced With a Computer Chip

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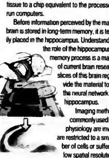

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MAX PLANCK INSTITUTE OF BIOCHEMISTRY

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GROVES OF ACADEME

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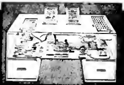
Memex Forges An Early Link



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MDA

DEFINITION

Model Driven Architecture is a way of writing specifications using platform-independent system models in the software development process. MDA focuses on the functionality and behavior of a distributed application or a system, not on the technology in which it will be implemented.

QUICK STUDY

BY JAN MATLIS

MODEL DRIVEN Architecture (MDA) is an approach to translating real-world algorithms into computer code. It focuses on representing algorithms in a modeling language, followed by a possibly automatic translation of the models into computer code. Doing justice to the definition of MDA's innovation requires a short, potted history of computers.

Without instructions, or code, computers are just expensive heaters. One of the main problems of the Computer Age has been how to give computers instructions to translate human desire into outputs.

For about 50 years, the answer has been to code in text-based languages, all of which try to aid programming. The first of these text-based languages was assembly, which is more human-readable than machine code, though it still requires a formidable understanding of how registers, memories and, sometimes, pipelined instruction fetches work.

Fortran, which stands for "formula translator" and dates from the 1950s, was the next step in divorcing programmers from a required knowledge of hardware. It hides the computer architecture of registers and presents a syntax that allows humans to concentrate on creating algorithms. Fortran incidentally fortifies the notion of free-floating subroutines and functions.

Other third-generation languages have offered varieties of abstraction from computer hardware, imposing rules and providing new ways for organizing algorithms and data. Type-safe languages have taken a stab at preventing programmers from making certain mistakes. Permissive languages, which allow easy casting of pointers, have enabled programmers to do all kinds of marvelous thing — including stringing up their own coding nooses.

Different approaches to managing algorithms, such as structured programming and object-oriented programming, have been developed. Programming languages that facilitate these paradigms have been created, and libraries of code have been published.

A culture of best practices, which includes requirements analysis, peer reviews and modeling, has arisen to help create software that contains fewer errors and is more efficient, reusable and portable.

Model Methodology

Unified Modeling Language (UML) has been promoted by Object Management Group Inc. (OMG), a Needham, Mass.-based standards body that's maintained by a consortium of interested companies. It has become the language for modeling algorithms and has been adopted by the software community at large.

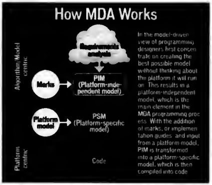
Originally, an algorithm was expressed in UML before it was manually translated into a text-based language, which was then automatically compiled into assembly language and machine code.

But that raised the question of whether the models themselves could be compiled into machine code, thus improving ways to think about algorithms and to produce software. Efforts to make the process simple and universal were the genesis of the paradigm shift that has led to MDA.

The OMG turned its attention from Common Object Request Broker Architecture to MDA with a white paper in 2000, beginning an effort at classification and standardization and in the process producing a new lexicon, including core notions of the platform-independent model (PIM), platform-specific model (PSM) and Meta-Object Facility (MOF).

UML has a role in MDA, but models do not have to be created in UML to conform to the OMG's MDA. Instead, both text-based and graphical languages must conform to MOF, which could be called a kind of mother language. (However, it's hard to say what came first; MOF was abstracted from UML, and UML is one of MOF's best examples.)

How MDA Works



In the model-driven view of programming, designers first concentrate on creating the best possible model without thinking about the platform it will run on. This results in a platform-independent model, which is the main element in the MDA programming process. With the addition of marks, or implementation guides, and input from a platform model, PIM is transformed into a platform-specific model, which is then compiled into code.

MOF is general and universal enough that the disparate companies that make up the OMG do not have to agree to use the same modeling languages. They only have to agree to follow the same principles.

After requirements analysis, modeling in MDA begins with PIMs. These models are meant to capture an algorithm but to ignore the computer hardware and software that will be used to implement them. The models are intended to be pure expressions of the algorithm, with the best division between design and implementation possible.

PIMs are translated into PSMs in the next stage, "compilation," in which the algorithms are made more ready to run. PSMs have features that correspond to the capabilities of hardware and software.

In addition, PIMs may have been "marked" to facilitate this transformation. Finally, PSMs are translated into actual code, which will run on actual hardware, or on actual middleware on actual hardware.

Automated Code

The vision behind MDA is to automate as much of the process of code generation as possible, leaving designers to focus on the algorithm instead. Using tools and languages that will make the design as good as possible, the implementation will come later and will have as little of the pesky interference of fallible humans as possible.

If the underlying hardware or operating system is changed, the model is simply "recompiled" or "retranslated" to work on the new system. If maintenance is required, the model serves as an accurate document of how the algorithm works, and only the model needs to be maintained. The idea is that implementation and coding errors will be minimized.

Fear that this process will produce inefficient code is similar to the reaction when the compilation of third-generation languages was compared to the direct writing of assembly code, which generated a fear that in many cases proved to be unfounded.

The OMG lists several large projects on its Web site that have successfully used automated MDA to produce efficient, successful code with fewer resources than would have been used in more traditional projects. These include work done for Wisconsin's Department of Workforce Development (see "Blueprint for Code Automation," March 22, 2004), Postgirot Bank AB, Looking Glass Networks Inc., Credit Suisse Group and others.

Matlis is a freelance writer in Newton, Mass. You can reach him at jmtgpcmcm@netzero.net.

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You Can Never Be Too Thin or Too Secure

Our manager takes inventory of what's been done to secure her agency's network and what still lies ahead. By C.J. Kelly

WHEN I think about our security strategy, I have to ask myself if we've done enough. Have we covered all the bases? If we haven't, do we have a work-around or some other risk-mitigation plan in place?

The best security approach is applied in layers. You can apply the layers from the inside out or the outside in, but most companies start from the outside, putting firewalls at every entry point to the network. At my state agency, though, we work from the inside out.

SECURITY MANAGER'S JOURNAL

State systems are sprawling. When I came to work at this agency, the state-level WAN guys assured me that they had adequately protected the state network, including my agency. But when you realize how vast the network is, stretching to every state government office and university classroom, you wonder how secure it can be without assistance from the various agencies. And so we have taken responsibility for the agency's security, working from the inside out.

When you work from the inside out, the most important protection you can provide is at the host level: servers, switches, networked printers and desktop computers. As networks connect around the globe, making it hard to say where they truly begin and end, this may be the smart approach. I can't control the networks we connect to, but I can attempt to control our entrance and exit points and what goes on inside. Here's what we've been able to do:

- **Servers:** We have protected our servers by hardening them: keeping the operating system up to date, turning off unneeded services, not installing unnecessary applications, providing access on a need-to-know basis and making passwords industrial-strength.
- **Patches:** Patching is perhaps the single most important thing you can do in a Windows environment. Because we have a week to test operating system patches before implementing them, that takes priority, and we do it after hours to minimize disruption.
- **Monitoring:** We use software that allows us to cull event-log information from each server and review it in a single location. We can set up alerts based on certain changes in the logs. We also have software that lets us monitor services running on each server. If an unknown service that might be listening in on or sending data over the network starts up, we are alerted.
- **Access:** We use Active Directory's security policies to control access to resources and systems. This includes access to network multifunction devices that provide fax/copy/print capability.
- **Firewalls:** When I first came to the agency, we had no firewalls. We've purchased commercial firewalls for each entry point, and I am drooling at the prospect of getting them installed. We run intrusion detection with sensors attached everywhere possible. We are getting close to total visibility, but it has been expensive. In my last column, I described how I repurposed all-in-one security appliances as single-purpose tools. We paid too much, but it works.
- **Wireless:** Not allowed on the network. Period.
- **Desktops:** The operating system is locked down or hardened. End users can't install applications. We don't use Windows XP's built-in firewall, but we keep all desktops patched around the clock using automated tools. Each desktop system automatically updates antivirus and antispyware protection.

Things Still to Be Done

So, what are we missing? Where are we weak? What can be exploited that we have not had the time, energy or funds to address?

- **Servers:** We don't run host-level firewalls or intrusion-detection and -prevention software. I just don't want anything to hinder the performance of production servers. Those ideas will stay on the back burner for a while.
- **Access:** Like many organizations, we have a file-sharing nightmare on our hands. While we control access-level permissions via Active Directory, everyone is approved to access everyone else's documents. We keep stressing the "need to know" concept, but everyone seems to need to know everything.

Access to the systems that house our agency's primary work requires several levels of approval. I'm comfortable with the security access levels, but the systems themselves are outsourced. I have no visibility into the security of the vendor's environment. I worry about that. According to our contract, the vendor must comply with federal security guidelines and regulations. I have to leave it at that.

- **Network:** We're still allowing Telnet to be used to connect to our switches. We ought to be using SSH, which provides an encrypted session as administrators make necessary changes. And the passwords are weak and haven't been changed in some time.
- **Desktops:** I still want to implement some personal firewalls, but XP's firewall can't be managed centrally by the systems administrator.
- **Encryption:** This is the one big hole in our strategy. We don't encrypt e-mail transmissions, traffic between our agency sites, file systems or laptop hard drives. The new firewalls will provide IPsec encryption between our sites. But there is so much more to do in the encryption area. Thinking about it can be overwhelming. I just need to break it down into manageable chunks and attack it.

In the end, we've done a lot from the inside out. We can do more, but we know that. We've given thought to our weaknesses, and in some cases, we have a plan. But I still wake up at night from time to time, thinking about how much more there is to do. ◆

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

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SECURITY LOG

[illegible] in St. Louis

A third of businesses in the St. Louis area do not consider business continuity planning a priority, according to a new IBM study. The company surveyed 100 IT executives in each of 10 U.S. cities and found that St. Louis, located near the potentially devastating New Madrid Fault, is particularly complacent when it comes to disaster planning. Just 60% of the St. Louis executives said they have a business continuity plan in place — lower than in any other city surveyed. And 40% of those that have a plan in place said their plan has not been tested in more than a year, if ever.

Tech Companies Found to Be Lax

Technology, media and telecommunications companies don't provide adequate resources and funding for security, despite the fact that more than half have had breaches in the past 12 months, according to a survey by Deloitte Touche Tohmatsu. Deloitte found that only 34% of those firms believe that the security tools they have deployed are being used effectively, and just 29% are "confident" that their patents and other intellectual property are properly protected.

FISMA Criticized

GovExec.com reports that some observers are hopeful that recent data-security breaches at U.S. government agencies could prompt changes to the Federal Information Security Management Act. They say FISMA certification and accreditation requirements consume large portions of IT budgets, leaving actual implementation underfunded.

BRIEFS

Open-Source App Manager Upgraded

■ **OpenLogic Inc. has announced OpenLogic Enterprise 4.0. The software, formerly known as BlueGlue, uses a new distributed enterprise architecture that provides a central repository of approved, open-source products within a corporate firewall. It also enables users to automatically install, configure and audit applications on remote servers and desktops, according to the Broomfield, Colo.-based company. The new version starts at about $30,000 for a typical deployment.**

VMware Adds Akimbi Features

■ **VMware Inc. has announced that it will add features to its virtual infrastructure software using technology it acquired in its recent purchase of Akimbi Systems Inc. Palo Alto, Calif.-based VMware said the software will incorporate new or enhanced virtual machine libraries, a virtual lab automation capability, configuration capture and management tools, and self-service provisioning capabilities. The features are expected to be released in beta in the third quarter.**

Patch Management Software Debuts

■ **Ecora Software Corp. has introduced two products that are designed to help IT organizations lower their IT security auditing and regulatory compliance costs. Ecora Patch Manager 5.0 lets companies purchase bundled packs of software patches for as little at $3 per node, according to the Portsmouth, N.H.-based company. The software automates system discovery, patch assessment and installation for Microsoft patches. Ecora also introduced Ecora Reporter, a Windows-based system designed to generate reports in an hour or less without the need to install software agents on audited systems. Ecora Reporter is sold in bundled packs, starting at $15 per server.**

DOUGLAS SCHWEITZER

E-mail Insecurity in A Litigious Society

I DON'T NEED TO TELL YOU that e-mail has changed the way the world communicates. I get more e-mails by far than I do letters delivered the old-fashioned way. That said, there's one aspect of e-mail that many of us overlook at our peril, and that's the information we put in our messages.

E-mail was not intended as a secure means of communication. Whether you're an attorney, an accountant, a CEO, a chief financial officer or an internal auditor — even if you work at home or are retired — you need to know that what you put in an e-mail could one day become key evidence in litigation.

Remember that the vast majority of e-mails traverse the globe in an unencrypted format. This is analogous to sending a postcard via regular mail. Think about it: What's to stop your mail carrier (or anyone else in the postal delivery chain) from reading the messages you write on postcards? Unless you've written in some obscure language used by only a handful of people, nothing can stop such peeping. Yet e-mails (containing information like account numbers, Social Security numbers and/or other sensitive and personal data) are passed around by millions each day with nary a thought to potential consequences.

[illegible] NY. He can be reached at [illegible]

And e-mails not only are vulnerable to snooping and contribute to a general loss of privacy; they have also become an increasingly used tool in litigation. The use of e-mail information as evidence in the Microsoft antitrust trial was just one of the most visible examples.

According to Jack Seward, a digital forensic accounting technologist in New York, some users still believe that digital encryption of e-mail isn't necessary. They argue that e-mail carries the reasonable expectation of privacy. Although that may have been true once, Seward warns, "known technological vulnerabilities of unencrypted e-mail make this presumption an old wives' tale at best."

What about e-mail accidents? It is easy to have e-mail accidents, and accidents are more common in important business and personal communications than most people may realize. An e-mail message can be easily sent to anyone in an instant — and there's no hope of retrieving it once you hit Send. It takes just a single errant keystroke or mouse click to send a message to the wrong recipient.

With password protection and encryption, a user can have some measure of security for misdirected messages. However, the best way to prevent accidents is to teach users what to do when things go wrong, as well as how to do it right in the first place. If possible, IT managers should also configure e-mail software so that the default setting produces the safest outcome.

The million-dollar challenge is to decide which type of security strategy and encryption software to use, and to determine whether it is prohibitively costly. A simple search on the Internet will show you that there are dozens of products available, some of them at no cost — meaning no monetary issues should get in your way.

It's important to note that when you're shopping for a product, you should match the protection provided for e-mail messages, systems and software to the value or sensitivity of the information that will be transmitted. Generally speaking, it's best to use a centralized control for e-mail services.

E-mail policies should be defined and should specify the level of protection to be implemented. Of course, if your company is using a secure channel like a VPN, your messages will be secure in transit, since VPNs typically employ some combination of digital certificates, strong user authentication and encryption to provide security for the traffic they carry.

These days, many lawyers, accountants, actuaries, financial planners, medical professionals and others freely send critical personal information in an unencrypted format. It is imperative that this practice change, with organizations adopting policies for the safe and secure handling of e-mail. Educating employees about safe e-mail usage and delivery policies helps reduce the risk of intentional or inadvertent misuse, thereby ensuring that confidential records transferred via e-mail are secured properly in transit and upon receipt.

Encrypting your e-mail will keep your messages safe from all but the most determined hackers. Protecting your intellectual property assets is paramount, and those assets include e-mail. In the end, this will become a non-negotiable requirement in our litigious society. Encryption is a reasonable precaution that we'll have to take when sending sensitive information anywhere around the globe. ▪

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Ron Milton, Executive Vice President, Computerworld

Business Intelligence Best Practice and Technology Overview
Kurt Schlegel, featured Research Director, Gartner

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Thomas Davenport, President's Distinguished Professor of Information Technology and Management, Babson College

Using Technology to Get Better Answers Faster
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MANAGEMENT

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HOW TO
What Do Users Want?
There's more than one way to get good user requirements. Business analysts like Andrew Ari Clibanoff at GSI Commerce offer some common and not-so-common methods you can try. **PAGE 40**

OPINION
Sorry to Inform You, But We've Lost Your Data
A double dose of bad news got Barbara Gomolski thinking about why corporations are losing so much customer data. **PAGE 44**

ADVICE
Managers' Forum
The business sponsor just won't follow proper channels. What's an IT liaison to do? Paul Glen offers some insights on that conundrum and more. **PAGE 42**

BRIDGING THE CHINESE SKILLS GAP

BY MARIA TROMBLY AND BILL MARCUS
SHANGHAI

HANKSCRAFT INC. has been making industrial motors and mechanized pumps for more than 50 years in Reedsburg, Wis. The company came to China just three years ago but already has twice as many employees here as it has at home.

Jonathan Funkhouser, who is general manager of Hankscraft's China operations and who makes the top-level technology decisions, thought it was going to be hard to get all the government approvals he would need in order to set up shop in China. But that turned out to be the easy part. "Finding good employees and managers was the most difficult," he says.

That's not the only problem. Salaries have been climbing fast — 20% to 30% a year on average for IT managers, Funkhouser says. And turnover is high. During the past three years, he has hired five critical IT employees and lost three of them. "It's been a very challenging thing for us," he says.

Finding people with specialized IT skills, such as in-depth knowledge of secure systems, can also be tricky, says Celine Zhang, China human resources manager at Paris-based Hachette Filipacchi Médias SA. Hachette is the world's largest magazine publisher, with titles such as *Elle* and *Marie Claire* and a presence in 39 countries.

Despite vast **numbers** of IT graduates, **suitable talent** is hard to find.

Despite widely read reports of waves of IT talent graduating from Chinese universities, the picture on the ground is quite different, say businesspeople operating in the country. The truth is that in China, a good IT professional is hard to find, and good IT managers are even scarcer.

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Normally, we don't hire managers; **we grow them.**

On the plus side, says Zhang, IT outsourcing companies have been coming to China recently, gradually deepening the talent pool. "There are quite a few IT consulting companies in the market now, and they have trained a lot of IT personnel," she says.

One such company is BearingPoint Inc., based in McLean, Va. Matthew Ding, a managing director for financial services at BearingPoint's Shanghai office, says firms like his also have to deal with the skills gap. Because the IT consulting industry in China is only about five years old, there's a lack of experienced project managers, he says.

Part of the problem is the Chinese educational system. Ding, Funkhouser and others observe that China's universities are heavy on theory and light on real-world practice, leaving employers to make up the difference.

Ding, for example, has had to become an interpersonal skills mentor. He had to teach one manager to delegate, to communicate with his team members and not to tell others to shut up. "Normally, we don't hire managers; we grow them," Ding says.

But not every company can afford that luxury, and an inexperienced manager can delay a project or cause it to fail, he says.

That's one reason why salaries for IT managers are rising faster than entry-level wages. According to Pieter Tsiknas, director of the Beijing office of Shanghai-based recruiting firm SearchBank Ltd., experienced midlevel IT managers typically make between $1,200 and $1,500 a month, compared with just $500 for an entry-level staffer.

Tough Times for Talent

The convergence of three phenomena in China's overheated economy is causing demand for skilled IT professionals to outpace supply, says Garry Wang, a consultant at Hewitt Associates Consulting Co.'s Shanghai office. Continued foreign investment in China, growth of existing multinational operations in China and the attempts of Chinese companies to go global are all widening the skills gap.

But there are cultural reasons as well. Many older Chinese, for example, have never experienced a market economy. "They have never been in a competitive environment," says Wang.

Moreover, studies show that Chinese employees of all ages are rarely qualified to work for a multinational company. According to a survey of 83 human resources professionals by the San Francisco-based McKinsey Global Institute, less than 10% of Chinese job candidates, on average, are suitable for work in a foreign company.

In an October 2005 report, "Addressing China's Looming Talent Shortage," McKinsey blamed much of the IT talent shortfall on the educational system and geography. The report noted that among other problems, graduates lacked conversational English skills and only a third of the 1.7 million Chinese who graduated from college in 2003 lived close to where the jobs were.

Moreover, foreign companies have to compete with globalizing Chinese companies for seasoned managers, and that demand will continue to outstrip supply by a ratio of 15-to-1 over the next 10 to 15 years, the report says.

Most in demand are Chinese IT managers with experience working overseas.

"Everybody shoots for the returnees," says Tsiknas, noting that they have the best English skills, solid work habits and multicultural savvy. "They bridge the divide between local and Western cultures and have experience that is not easily gained here in China," he says.

Language Barriers

Among the various sourcing peculiarities and problems specific to China is regionalism, [illegible]

The shortage of midlevel IT managers has driven salaries in Beijing, Shanghai, Guangzhou and Shenzhen — China's leading coastal business centers — up 8% to 10% per year, Wang says. Salaries in second-tier cities are generally 20% lower but are increasing at a higher rate, he adds.

Coping

Stopgap measures for handling the IT talent shortage can make things worse. Poaching from competitors, for example, is a much decried though common practice. "There is a tendency in China for employees to jump for relatively small salary improvements," says Linda Sprague, a professor of manufacturing and operations management at China Europe International Business School in Shanghai.

This is a three-part problem, she explains: The company loses an employee it has been developing, the IT person who jumps may never stay in one place long enough to become really experienced and productive, and salaries rise even faster.

Another strategy is to tap overseas communities of Chinese speakers in Singapore, Taiwan and Hong Kong, who usually have excellent English skills and are used to working to Western standards in multicultural environments. Because they are in demand, IT managers from Singapore and Taiwan — and especially Hong Kong — command the biggest salary packages, according to a 2005 compensation and benefits survey conducted by Watson Wyatt Worldwide Inc., a global human resources consulting firm based in Arlington, Va.

But additional costs, such as housing expatriate workers and flying them home to see friends and family, doubles what a company would spend on a Chinese employee. "Everyone is trying to scale back on these because they are expensive," says Wang.

Multinational corporations have one distinct advantage over domestic Chinese companies when it comes to attracting the best and the brightest: The sky's the limit as far as opportunities for advancement are concerned. Well-known companies such as General Electric Co., Siemens AG, Motorola Inc. and The Dow Chemical Co. can attract good people if they have a reputation for nurturing employee success, Wang says. That's because, at least in one respect, Chinese IT workers are like their counterparts everywhere. "Pay is usually not the key driver for attracting top employees," Wang says. "Many people are driven by factors such as career opportunities, training and education."

Employers that provide those extras build reputations that help attract the best talent while drastically reducing the cost of recruiting. "In a profession such as IT, where turnover is 25% or more, this cost can be significant," Wang says.

Apparently, the approach is working for global soft-drink giant Coca-Cola Co. "We have no problems in attracting and recruiting skilled IT managers," says Coca-Cola Asia spokesman Kenth Kaerhoeg. "Fortunately, the talent pool in China is increasing rapidly. In addition, we provide intensive training to all new recruits."

In terms of career opportunities, one of the most powerful lures is the promise of an international career development path. "It's a fallacy to think you can retain people purely on cash compensation," says John Ruthven, general manager of Asia-Pacific operations at Islandia, N.Y.-based CA Inc.

The software vendor is putting together plans for one- and two-year rotations through its Hong Kong office or other international locations for its Chinese employees. "Overseas postings make them extraordinarily marketable and extraordinarily valuable to a multinational business operating in China," says Ruthven.

And what about companies that can't afford to pay top rates or rotate people through glamorous international locations? They may have to set their sights lower, says Samuel Ritter, a senior consultant at SSBG, an IT services provider based in Shanghai.

"A lot of companies are forced to make changes in their requirements," Ritter says. "Where they were looking for 15 years' experience, they're lucky if they get five to eight. Where they want fluency in Chinese and English, they're lucky if they get just professional Chinese communication skills. Where they want a good personality and a team player, they may have to settle for someone with people issues." ◆

Trombly and Marcus are freelance business and technology writers based in Shanghai. Contact them at maria@trombly.com and billinchina2003@yahoo.com.

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What Do Users Want?

By Mary K. Pratt

a senior business analyst at GSI Commerce, says the goal in gathering user requirements is to eliminate ambiguity.

BILL CRAMER

WANT TO COMPLETE A PROJECT SUCCESSFULLY?

HOW TO

Then you'd better have success at the start. That means getting requirements right, and there are as many ways to do that as there are business analysts charged with getting it done.

But impatience, miscommunication, misunderstandings and overlooked users can produce requirements that aren't clear or complete. "You want to have as little ambiguity as possible, because ambiguity creates defects," says Andrew Ari Clibanoff, a senior business analyst at GSI Commerce Inc., a King of Prussia, Pa.-based provider of e-commerce services.

Those defects can be costly. Ellen Gottesdiener, principal consultant at EBG Consulting in Carmel, Ind., and author of *The Software Requirements Memory Jogger* (Goal QPC Inc., 2005), says that roughly one-third of the budget for a typical project goes to fixing defects that originated in faulty requirements.

The following tips will help you avoid becoming part of that depressing statistic.

UNDERSTAND THE OVERALL OBJECTIVE. "You need to have a point of reference: What is the strategy for the organization? What are they trying to accomplish in the medium and the long term?" says Josephine Day, director of customer care and technology at the Project Management Institute in Newtown Square, Pa.

When the objective is clearly defined, you can identify the right stakeholders and users, as well as which other programs could be affected by the proposed project — all important steps toward success, says Day.

USE ALL YOUR TOOLS. Susan Burk, a systems architect at Massachusetts Mutual Life Insurance Co. in Springfield, Mass., promotes the use of "self-documenting facilitated workshops" to compile user requirements. "Get the people in a room [who are] empowered to make decisions, have a good facilitator, have a good scribe, discuss requirements, and at the end of the session, it's there," she says. This approach helps reduce miscommunications, because attendees can see draft requirements right away, Burk says.

But don't rely only on this or on any other single information-gathering approach. "There isn't one way to collect, communicate or verify requirements," she says.

Gottesdiener says common techniques include interviews, exploratory prototypes, facilitated workshops and plain old observation. Business analysts, who generally gather requirements, should interview all the stakeholders, including the business leaders sponsoring the project, the project champions and the people who will use the system to be developed.

Business analysts should also involve key stakeholders in workshops, Gottesdiener says, but they have to know who to involve and when to involve them. If the project team is still trying to develop a high-level vision, invite high-level stakeholders such as project sponsors. When it's time to "get down-and-dirty with the requirements," she says, invite prospective users.

Another way to gain useful information is by watching how business people currently handle the processes that the new project will address, Gottesdiener says. Apprenticing — that is, actually doing the user's job — is a helpful technique for business analysts, she says, although it's not always feasible.

Another creative technique is to get prospective users to write user manuals for the systems to be developed. This forces them to think about how they're going to interact with the system, resulting in a vision for how the product should work, according to Gottesdiener.

KNOW WHAT GROUND TO COVER. Although there's no one-size-fits-all process for gathering user requirements, it's important to know what ground you need to cover. That's why Peter Roggemann found a checklist helpful.

Roggemann, a retired JPMorgan Chase & Co. senior vice president, was responsible for the project office there. His checklist highlights the following four points:

- **Flexibility:** What things are users asking for now, and how might that change in the future?
- **Connectivity:** Who needs this data, and who will interact with it? Which other systems connect to the application being developed? In short, Roggemann says, "where does the data have to come from and go to?"
- **Process:** What process does the application drive? "Often, people know what's supposed to happen, but they don't articulate it," Roggemann says. Help them do so.
- **Capacity:** What volume of transactions will the system need to be able to handle now and in the future? "That tends to be a blind spot for everybody," says Roggemann, who now runs his own consulting firm, Profitable Projects Inc. in New Rochelle, N.Y.

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KNOW WHOM TO REACH — AND WHEN. "It's crucial to talk to the right level [worker] with the right knowledge at the right time," says Bill Hagerup, a senior facilitator at Ouellette & Associates Inc. in Bedford, N.H. Higher-level managers can give you scope and big-picture perspective, while lower-level workers provide details on specific needs.

To do this, however, you might need to navigate some sticky political situations, says Shelley Cudly, a business analyst consultant at TD Ameritrade Inc. in Omaha. She remembers working on projects where one person said one thing, another said something different, and a third said something else. "You have many different constituents, so who are the tie-breakers?" she asks. "Know who the answer people are."

This is where a business analyst's soft skills and office connections can pay off, Cudly says. She finds that time spent with co-workers while traveling on business has helped her navigate some situations that could otherwise have been more difficult.

Hagerup says business analysts should socialize with their business clients — go to lunch or play golf together — to build up the rapport needed to handle power struggles that inevitably come up.

USE ANY AND ALL CHANNELS. Don't limit yourself to official channels. "I have some great resources who aren't even on a project that help me find the gotchas," Cudly says. She often contacts a senior manager on the business side who, she says, "has the right kind of analytical brain." Cudly asks him for his insight on how a project will affect others or the names of managers with whom she should meet.

WALK A MILE IN THEIR SHOES. To really understand what a user needs, develop empathy for the business clients. "See it through their eyes," Hagerup says.

When he was a senior programmer at Burger King Corp. in the 1970s, Hagerup was part of a team developing the systems that are ubiquitous at fast-food restaurants today. He was required to work in a restaurant for one week every year, and he says he still remembers the perspective he gained from it. "It gave me a much better appreciation for the nature of the work," Hagerup says. "They have to do a lot of stuff, and they have to do it fast."

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Clibanoff had the two managers present the scenario during a workshop with other stakeholders, who walked through the transaction and discussed what the software needed to do to handle it. "It's sort of starting from the end and working backwards," he says, adding that when the process is complete, "you have some really great requirements you can validate."

ASK, ASK AGAIN, AND THEN ASK ONE MORE TIME. "Be an information-gathering skeptic," says Naomi Karten, principal of consulting firm Karten Associates in Randolph, Mass. "Take nothing you hear at face value. No matter what you hear, assume that you may not be understanding what they mean. Challenge your assumptions. Ask questions and more questions."

If this sounds inefficient, Karten stresses that it's not. Rather, it helps draw out all the information needed to compile user requirements.

Cudly says analysts need to tap into their people skills to do this effectively. She routinely asks the same person the same question, although she tries to phrase it differently so that she doesn't annoy anyone. Because she also asks the same question of different people, she tries to be diplomatic, saying, "So-and-so told me this, but I'm not sure I understand. Can you explain it?" or, "I talked to so-and-so, but I want to talk to you about this too."

Cudly doesn't stop there, however. At the end of interviews, she asks, "Is there something I'm not asking that I should be?" That kind of open-ended question can elicit crucial information that you might not otherwise think to ask about, she says.

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Actions Speak Louder

ASKING USERS the right questions is only half the battle, says Naomi Karten. She has seen firsthand how the wrong body language or unconscious actions can suppress free speech – and good user requirements. "If you have a tone of impatience or the wrong look on your face, then it's going to stifle what other people say," says Karten, principal of Karten Associates.

Karten recalls running a workshop where participants broke into groups of three, with one playing the role of an IT worker, the second acting as a customer and the third observing the interaction. One "customer" reported that the IT person periodically took deep breaths during the interview, leading her to rush through her responses because she took that as a signal of impatience.

At another workshop, Karten saw how an "IT worker" was so eager to say something that he waited with his mouth open for a chance to talk. His workshop partner said that that facial expression gave him the impression the IT worker wasn't listening.

"Just be aware of your behavior, because it makes a difference," Karten says.

– MARY K. PRATT

[MANAGERS' FORUM]

WITH PAUL GLEN

Welcome to the Managers' Forum. I hope this monthly column will provide a lively exchange of ideas with IT managers. I'll do my best to answer your questions, and some of your responses will run alongside in "Readers Talk Back." Please send your questions, comments and critiques to me at pglen@c2consulting.com.

I'm acting as the liaison between the sponsor organization and the IT department. The sponsor always goes around me directly to other people in the department. How can I get him to work through me as he is supposed to?

First, you've got to avoid the temptation to try to simply enforce policy. When faced with a recalcitrant sponsor, many people in liaison roles will try to use process and procedure as a bludgeon to bring a client into compliance. This rarely works and usually makes things worse, increasing the frequency of the bypassing behavior.

Some go all-out to try to enforce policy, getting others in the department to collude to avoid contact and then reject the sponsor's overtures when avoidance fails. This, too, makes things worse. The sponsor becomes frustrated with both the liaison and the rest of the department.

All of this looks to a sponsor like spoiled children stomping their feet, complaining that they are not "doing things the right way."

So you need to think carefully and dispassionately about why your sponsor is doing this. Of course, that's easier said than done. Being ignored probably feels like a constant slap in the face. It's easy to take it personally and to let it cloud your judgment about the situation. So it may pay to ask a few of your colleagues about their observations of the relationship and why they think this is happening.

In my experience, there are a few common reasons that this occurs:

Reason No. 1: No trust. I hate to say it, but the most common reason I've observed for sponsors to bypass liaisons is that they don't trust them, personally or structurally. For sponsors, channeling all communications with IT feels risky. They have a single point of contact, but also a single point of failure. And the more central IT is to their success, the more risky the relationship feels and the more compelled they are to seek additional relationships to ensure their access to services.

I think that there are three common reasons why sponsors don't trust their liaisons: They question their competence, their intentions or both.

If sponsors question a liaison's ability to understand their needs or to negotiate within the IT department to get their requests filled, they go around the person. If this is the case, you need to figure out how to build credibility slowly, over time.

Sponsors generally question the intentions of their liaisons more from a structural than a personal viewpoint. They may feel that the purpose of the liaison role is to isolate them and keep them controlled. If this is the case, you need to figure out how to reassure your sponsor so he understands that you are there as his advocate and not as a bulwark for IT.

Reason No. 2: Prior relationships. Sponsors who are used to (and perhaps have been happy with) a more enmeshed IT environment have existing relationships with many people in the department. It's hard to tell people that they shouldn't talk to those with whom they have been comfortable or are at least familiar.

The sudden shift of relationships just doesn't work too well. If this is the case, you need to work to gradually channel more communications through you rather than try to isolate the sponsor.

Reason No. 3: Better service. Even though they may trust their liaisons, many sponsors know that they get what they want faster when they contact the technical people directly. They learn who the soft touches are and call them up instead of going through proper channels.

This is the one case where you might need other people to help you channel requests appropriately. Again, slow weaning tends to be a bit easier than rigid policy enforcement.

I work in a small company, and a peer here can be quite abusive toward his staff. One valuable person has quit, and another may leave soon. What can I do to help fix this manager's anger management problem?

Sadly, probably not much. When others have temperaments ill-suited to management, you can't help them until they are ready to help themselves. If your peer doesn't realize that this is a problem, your telling him about it will probably bring his ire your way.

But you may be able to help out the company and the valuable employees who are being abused. You can lend a ready ear to his suffering underlings. And if you think that someone who is an asset to the company is about to quit, you can quietly work to help him seek an internal transfer rather than outside employment.

Going to your peer's boss (probably your own, too) unfortunately is probably not a great option. He likely can't help beyond removing this person from management. But if he already knows about your peer's abusive behavior and has done nothing, he may be shamed by your confrontation. If he hasn't noticed that your peer is an abuser, then you have a different problem — with your boss's competence. ▪

READERS TALK BACK

More on Project Managers and Sponsors

I think you missed an opportunity to discuss "the project manager as politician." I know we think of *politics* as a bad word, but only because we look at the negative side of it. Politics is simply the art of influencing people, and that can be for good, as well as for self-interest. Not getting people to do what needs to be done and not having "control" over them was frustrating the letter writer, and that says that he or she needs to learn some influencing (i.e. political) skills.

Most leaders in most fields have not had direct control – certainly not at the beginning. They attained their results through their ability to influence. That's what project managers need to do, and if they can't or don't they won't succeed.

The other question is a variation of the old chestnut, "Do you have to know the subject or do you have to know how to teach?" On that one, I come down squarely in the middle. Certainly, you do no favors to yourself, your staff or your company by doing their jobs for them. When I tried that in my first managerial job, my boss told me he didn't pay me for doing that work, and if I felt I had to, I wasn't hiring the right people.

On the other hand, to be an effective manager of a team, I believe you have to understand the subject well enough to give them the type of guidance and leadership they need.

– P.W.

Hi, Paul,

New managers, and many seasoned managers, need to consistently audit how they are framing the internal conflicts that difficult situations can bring up. The only thing you can really alter is your view of the situation and your reaction to it. Your personal integrity must lead the way. – J.H.

[MANAGERS' FORUM]

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Q I'm acting as the liaison between the sponsor organization and the IT department. The sponsor always goes around me directly to other people in the department. How can I get him to work through me as he is supposed to?

First, you've got to avoid the temptation to try to simply enforce policy. When faced with a recalcitrant sponsor, many people in liaison roles will try to use process and procedure as a bludgeon to bring a client into compliance. This rarely works and usually makes things worse, increasing the frequency of the bypassing behavior.

Some go all-out to try to enforce policy, getting others in the department to collude to avoid contact and then reject the sponsor's overtures when avoidance fails. This, too, makes things worse. The sponsor becomes frustrated with both the liaison and the rest of the department.

All of this looks to a sponsor like spoiled children stomping their feet, complaining that they are not "doing things the right way."

So you need to think carefully and dispassionately about why your sponsor is doing this. Of course, that's easier said than done. Being ignored probably feels like a constant slap in the face. It's easy to take it personally and to let it cloud your judgment about the situation. So it may pay to ask a few of your colleagues about their observations of the relationship and why they think this is happening.

In my experience, there are a few common reasons that this occurs:

Reason No. 1: No trust. I hate to say it, but the most common reason I've observed for sponsors to bypass liaisons is that they don't trust them, personally or structurally. For sponsors, channeling all communications with IT feels risky. They have a single point of contact, but also a single point of failure. And the more central IT is to their success, the more risky the relationship feels and the more compelled they are to seek additional relationships to ensure their access to services.

I think that there are three common reasons why sponsors don't trust their liaisons: They question their competence, their intentions or both.

If sponsors question a liaison's ability to understand their needs or to negotiate within the IT department to get their requests filled, they go around the person. If this is the case, you need to figure out how to build credibility slowly, over time.

Sponsors generally question the intentions of their liaisons more from a structural than a personal viewpoint. They may feel that the purpose of the liaison role is to isolate them and keep them controlled. If this is the case, you need to figure out how to reassure your sponsor so he understands that you are there as his advocate and not as a bulwark for IT.

Reason No. 2: Prior relationships. Sponsors who are used to (and perhaps have been happy with) a more enmeshed IT environment have existing relationships with many people in the department. It's hard to tell people that they shouldn't talk to those with whom they have been comfortable or are at least familiar.

The sudden shift of relationships just doesn't work too well. If this is the case, you need to work to gradually channel more communications through you rather than try to isolate the sponsor.

Reason No. 3: Better service. Even though they may trust their liaisons, many sponsors know that they get what they want faster when they contact the technical people directly. They learn who the soft touches are and call them up instead of going through proper channels.

This is the one case where you might need other people to help you channel requests appropriately. Again, slow weaning tends to be a bit easier than rigid policy enforcement.

Q I work in a small company, and a peer here can be quite abusive toward his staff. One valuable person has quit, and another may leave soon. What can I do to help fix this manager's anger management problem?

Sadly, probably not much. When others have temperaments ill-suited to management, you can't help them until they are ready to help themselves. If your peer doesn't realize that this is a problem, your telling him about it will probably bring his ire your way.

But you may be able to help out the company and the valuable employees who are being abused. You can lend a ready ear to his suffering underlings. And if you think that someone who is an asset to the company is about to quit, you can quietly work to help him seek an internal transfer rather than outside employment.

Going to your peer's boss (probably your own, too) unfortunately is probably not a great option. He likely can't help beyond removing this person from management. But if he already knows about your peer's abusive behavior and has done nothing, he may be shamed by your confrontation. If he hasn't noticed that your peer is an abuser, then you have a different problem — with your boss's competence. ◆

READERS TALK BACK

I think you [illegible] to discuss [illegible] politician [illegible] politics as a bad word [illegible] because we [illegible] side of it. Politics is [illegible] influencing people [illegible] for good as well [illegible] Not getting people [illegible] be done and not [illegible] them was frustrat[illegible] and [illegible] needs to earn [illegible]

[illegible]

P.W.

[illegible]

J.H.

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EXEC TRACK

Oates Appointed CIO For City of Boston

Boston Mayor Thomas M. Menino has announced the appointment of **WILLIAM G. OATES** as the city's CIO. Oates was previously senior vice president and CIO at Starwood Hotels & Resorts Worldwide Inc.

CIO to Lead Bank Innovation Office

The Bank of New York Co. has created a new unit known as the Office of Innovation to accelerate the pace of product innovation across its securities servicing businesses. The office will be headed by CIO **KURT WOETZEL**, who has been promoted to the position of senior executive vice president and continues to report to Vice Chairman Donald R. Monks. The Office of Innovation will support attempts to accelerate the development and commercialization of new products and services.

Silva Named IT VP At Golden Eagle

SUE SILVA has been promoted to vice president of IT at Golden Eagle Distributors Inc., the Tucson, Ariz.-based distributor of Anheuser-Busch Cos. products. She joins the executive strategy team, which directs corporate planning and vision.

Johnson Joins Performance Fibers

Performance Fibers Inc., a global producer of industrial polyester, has named **JAMES A. JOHNSON II** vice president and CIO. Johnson joins the Richmond, Va.-based company from Honeywell International Inc.'s specialty materials business group, where he was an IT director.

DBL Distributing Picks Rough as CIO

DBL Distributing Inc., a Scottsdale, Ariz.-based wholesaler of consumer electronics accessories, has appointed **JOHN ROUGH** as CIO. Rough joins the company from Remec Inc.

BARBARA GOMOLSKI

Sorry to Inform You, We've Lost Your Data

LIKE MANY OF US, I read with dismay the news that personal information on millions of U.S. veterans had been stolen. What made this story even more poignant is that I recently had my own brush with a similar security breach.

Picture this scene: It's late afternoon on a warm day. I have just returned home from running errands, bogged down with packages and my mail. I'm juggling my parcels and am a bit overheated.

Along with all the not-so-important stuff in the mail is a letter addressed to my husband and me from a professional society to which he belongs. Mind you, this is a society for individuals who are in the accounting/auditing profession. The letter tells us that a computer hard drive — one that happened to contain our personal information — has gone missing.

[illegible]

I announce the news to my husband in the next room, garner some kind of grunt from him and proceed through the rest of the mail.

Next, I see a notice from our bank, which holds our checking account and the mortgage on our house. What do they have to tell me? It appears that a laptop they were shipping was stolen en route. Unfortunately, said laptop contained all the goods on my spouse and me.

I tell my husband, "You're not going to believe this," and regale him with the news. This time, he actually looks up, shakes his head and mutters something.

So, in just one day, I received two letters from organizations that are considered stalwarts in their respective industries informing me that they may have inadvertently unleashed various pieces of my personal information into the world.

I should point out that both the association and the bank assured me that the chances that any harm would actually come to me are slim, since both systems were apparently password-protected.

Still, both entities advised me to monitor my credit report very closely for the next few months — just in case. (I would like to suggest that they consider taking on that task, since the situation is their fault.)

What strikes me as ironic (other than receiving both of those letters on the same day) is that we're not talking about large-scale hacks into corporate networks or intricate scams to sniff network packets. Both of these breaches involved the physical loss or theft of PCs or IT components, and both could have been prevented. These incidents were the result of a failure on the part of these organizations to track, protect and hold on to their physical IT assets.

Almost on a daily basis, I hear CIOs say that their asset tracking and management systems are not up to snuff. As a result, there are some IT assets — often 10% or more — that are not even appearing on the radar screens of IT organizations.

These assets may be departmental PCs or items that individuals have purchased using their expense accounts. They may be systems that have been retired but not disposed of. They may be hardware or software sitting in a closet in someone's office.

Asset tracking and management is not a sexy subject, and it's not something that most CIOs see as a way to score big points with top management. But IT assets have great corporate value because of the information contained within them, and the consequences of not tracking them can be significant.

Even so, many organizations treat them as disposable commodities that don't need to be secured.

If you haven't already done so, get a handle on asset tracking and management before you find yourself writing a "Dear Customer" letter. Here are some suggestions:

- Specify policies for IT asset procurement and security, and communicate them often to employees.
- Assign asset tracking and management responsibilities to someone in your organization.
- Don't forget to include hardware and software assets when taking inventory.
- Use asset tags for physical devices.
- Recognize that IT assets have a useful life (or life cycle). Track and monitor where assets are in that life cycle.
- Develop a technology disposal policy that aligns with your organization's overall compliance and risk plan.

By employing sound asset tracking and management, organizations can improve their ability to protect customer information.

Until they do, we are all going to be getting letters like the ones I received. ▸

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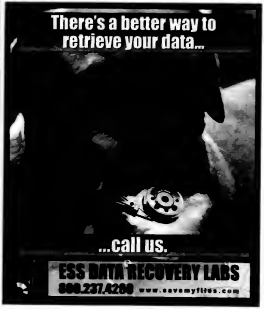
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Novell

pian joined Novell in 2003.

"Ron is a much more dynamic individual than Jack," Biernat said. "He had no qualms about getting on the corporate jet and flying out to meet us. Jack sometimes seemed pained to have a conversation. No offense to Jack, but I'm surprised he made it as long as he did."

COCC has been a Novell customer for the past decade. Biernat said his company moved more than 60 servers to SUSE Linux Enterprise Server three years ago because of Novell's plans to buy the technology.

Good Impression

The chief technology officer at a large, nonprofit health care provider that uses SUSE Linux Enterprise Server and Novell's identity management tools said he has met with Hovsepian a half-dozen times.

"I'm impressed with Ron's vision of the company and his understanding of the market," said the CTO, who asked not to be identified. He added that Hovsepian "has an executive presence. He engages well with executives of larger customers. He doesn't see us as a burden."

The CTO said Hovsepian probably should consider dropping Novell's GroupWise e-mail and collaboration suite because it isn't competitive with rival offerings anymore. He added that he would like Novell to move much more aggressively to provide certified interoperability and support for a full stack of open-source software on top of SUSE Linux.

Hovsepian said during a teleconference that Novell will continue to pursue its current product strategy, including Linux and its traditional flagship NetWare, as well as identity, data center and security management tools. But, he added, he will focus even more resources on Linux technologies than Novell has thus far.

> **"Novell is not Microsoft. . . . They are going to have to make some hard decisions that will likely make some customers unhappy.**
>
> **BRENT BIERNAT**, ASSISTANT VICE PRESIDENT OF NETWORK SERVICES, COCC

"As CEO, my top priority is to accelerate the speed and urgency behind our transition to Linux-based products," Hovsepian said. The acceleration effort may include some acquisitions, particularly ones involving management tools, he said. Hovsepian also plans to start requiring users to register with Novell when they buy SUSE Linux, in an effort to make it easier for the company to sell add-on services.

Hovsepian, 45, was named Novell's president and chief operating officer last November, after previously running global sales and services. In an interview last week, Hovsepian — who earlier spent 17 years at IBM — said Novell employees had "been requesting the right leadership for a period of time" (see Q&A, at right).

Messman, 66, became Novell's chairman and CEO in 2001, when the company bought Cambridge Technology Partners Inc., the IT consulting firm he was running. However, the acquisition never met expectations, and Novell in May sold off its Celerant Consulting unit — the remnants of CTP — as part of a corporate restructuring plan that was announced last fall.

Novell said that Messman will step down from its board at the end of October. The company last week also ousted Joseph Tibbetts Jr., its chief financial officer, and named an interim CFO while it searches for a permanent replacement.

Laura DiDio, an analyst at Yankee Group Research Inc. in Boston, said the only surprise about Novell's decision to change CEOs is that it took so long. Messman "clearly took over a company whose glory days were behind it," DiDio noted. Even so, "the bottom line here is that he was not getting the job done," she said. "Linux and open-source were supposed to be Novell's savior, and that hasn't happened."

Chris Stone was Messman's second-in-command and was widely considered to be the heir apparent as CEO before he abruptly left Novell in November 2004. The board's action last week was "long overdue," said Stone, who now is the CEO of software vendor StreamServe Inc. in Burlington, Mass. "I think quite honestly that justice prevails."

"Novell has good technology but next to no go-to-market strategy," said Forrester Research Inc. analyst Michael Goulde. Hovsepian, he added, appears to be a good choice to "possibly put that in place."

The new CEO has a stronger operational background than Messman did, observed Stacey Quandt, an analyst at Aberdeen Group Inc. in Boston. That should bode well for users unhappy with Novell's recent inability to execute on its plans, Quandt said.

Rudy Ebisch, systems technical support director at Canon USA Inc. in Lake Success, N.Y., lamented that Novell focused too much on vaporware at its BrainShare user conference in March. "Tell me what you're doing, not what you're going to do," Ebisch said. But if Novell can deliver on all the promises, "it will be great," he added. "We're not going anywhere." ■

Board 'Saw What Needed to Be Done,' New CEO Says

BY DON TENNANT

Ron Hovsepian, Novell's newly appointed CEO, spoke last week with *Computerworld* about what has gone wrong at the software vendor in recent years and what needs to change there. Excerpts from the interview follow.

Is it fair to say that you've been frustrated the past couple of years riding shotgun and not being in the driver's seat, so you couldn't steer Novell where you thought it needed to go? It's fair to say that I'm excited about the opportunity to lead the company and to be more aggressive with our execution.

Why do you think it took as long as it did for the board to recognize that Novell needed new leadership and do something about it? That's a complex subject, obviously. What I'm pleased with is that they saw what needed to be done, and they took their action. They needed to take some time to look at their options and to look at me to see if I was a legitimate player.

In all candor, do you think it took longer than it should have? I'll pass on that one.

In hindsight, do you think that Novell's acquisition of Cambridge Technology Partners five years ago was a mistake? No. I think the execution could have been done better. We didn't get a timely integration done. We also confused our go-to-market model with our business model. What I mean by that is we took the business model of consulting and mixed it with the software business model. We translated that into, "OK, that means we sell consulting now." What it really should have been [about] is using consulting to leverage our software products.

Did the acquisition take Novell's eye off of the enterprise software ball to the detriment of the company and its users? I can't quantify the impact of that. I'm quite sure it had an impact, from my point of view. What I'm trying to do is make sure we learn from that.

How would you describe the morale within Novell over the past five years? I would say it's probably been mixed. Internally, the team has been requesting the right leadership for a period of time.

You said on the conference call after the management change was announced that you want to accelerate the company's transition to Linux-based products, and that doing so may include "nonorganic growth." What holes does Novell need to fill through acquisitions? The opportunity to deliver more open and better-valued management tools that take advantage of what we've enabled inside the [SUSE Linux] distribution are areas where we could use some outside help.

Do you think your users will be better served if Novell remains an independent company instead of being acquired itself? It's a speculative question. From my point of view, whether we're acquired or not is less relevant. What I'm focused on is making sure that we end up having the most satisfied customers that we can get.

As part of the management transition, Novell has separated the chairman and CEO roles. What's your perspective on the prudence of that separation of powers, from a corporate governance standpoint? I'm a fan of it. I believe it's a good, healthy practice. It allows the chairman to always have the proper alignment of the board with the shareholders at heart.

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Security = $$

SECURITY MEANS MONEY. If you have any confusion about that, consider the survey results released last week by accounting firm Deloitte Touche Tohmatsu (you can find it online at *deloitte.com/tmtsecurity*). According to the survey, technology, media and telecommunications companies are doing a mediocre job at best of dealing with IT security issues.

But that's not the point. The point is that these money guys did an in-depth survey of security at 150 companies in this sector. Deloitte just did a similar survey on IT security at biotech and pharmaceutical companies, and Deloitte's fourth annual survey of financial companies' IT security should be out any day now.

If that doesn't wake you up, then you don't understand your CEO.

Let's be cynical and assume that your CEO doesn't really care about IT security. Let's guess that he doesn't care about the impact of a security breach on business operations, on customers and on your company's reputation. Let's assume that he really only cares about one thing: boosting your company's stock price.

(Actually, that's not so cynical. Plenty of investors, and big shots like The Conference Board, believe that's all he *should* care about.)

Now here comes Deloitte, the kind of accounting firm that stock market analysts pay attention to. And Deloitte says IT security is important. Important as in bottom-line, dollars-and-cents important. Important enough that the accountants are digging into it on an industry-by-industry basis.

That's the kind of research that gets stock pickers to take their own looks at specific companies and their IT security. And when stock pickers care about IT security, your stock-price-obsessed CEO will start caring deeply about it too.

As long as we're assuming, let's assume you've been trying for years to get the budget you need to really step up to the security challenge. But it's always been the toughest sell imaginable. There's no measurable return to show on a security investment. The whole idea of improved security is that it should measure as zero: *no* break-ins, *no* lost customer data, no public embarrassment, no dollar value to report as a loss.

How the heck do you sell that to the boss? You can't. And you haven't.

But suddenly your CEO is very receptive. He wants IT security. He wants it now. He's willing to pay.

FRANK HAYES, *Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.*

That's a dream come true, right? Not unless you can deliver the right kind of IT security — the kind that helps push up the stock price.

Focus on the wrong areas so your company still scores badly on security with investors, and you'll be worse off than you were before. Your dream will turn nightmarish: You'll lose that security budget, lose credibility with your CEO and maybe lose your paycheck, too.

What can you do? You can start now to prepare an IT security improvement program that will make your CEO happy *and* meet the rest of your company's needs.

Begin by poring over those Deloitte survey reports. Deloitte's analysts are especially concerned about phishing, pharming, internal misconduct, employee training, encryption and business continuity. That means you should be, too. Even if you don't buy into their priorities, those are the things you'll be graded on.

Now add the security issues you've already identified as important for your company. Then stitch together a plan that's guaranteed to pry loose money from your CEO because it directly addresses things that will affect what he cares about: the stock price.

Is that a cynical cheat? OK, maybe it is. Here's your choice: You can keep banging away fruitlessly, or you can use cynical cheat to get your organization the kind of IT security it needs.

You can sell your CEO on security — if you sell him the right things.

Just remember: Security means money, the kind of money your CEO understands.

And now you understand it, too. •

Malfunctioning Parts

Something's wrong with this optical mouse – or is it the PC? "The cursor would be OK for a moment or two, then it would leap to an unpredictable extreme of the screen," says pilot fish, who tries swapping in an identical replacement. Same problem. "In frustration, I pushed the mouse away from me and onto the desktop. And then it behaved. I looked at the mouse mat. It was a nice, pale-gray color with delicate changes in hue and a logo in th . center. Who would have thought that, in an entire PC, it woul.. be the mouse mat that was malfunctioning?"

SHARK TANK

Hello, Dali

Trouble ticket reads, "My keyboard has melted." And so it has. "It resembled some of Dali's more off-the-wall works," fish reports. "The numeric keypad had clumped together, and the Enter key had started to blend into the Shift key." What happened? After spilling water on it, the user decided to dry it herself – on an electric heater. "Then she started to explain to the user across the way what she was doing," says fish, "which led to a conversation about PC problems, and she lost track of the time."

Unreal

Regional admin at this insurance company calls pilot fish to complain that she has lost access to the adjuster management system. "She says she was able to access the system yesterday but can't log in today," fish says. "I go through the logs and determine that her ID has been deactivated – *by her*. When I ask her about it, she says that since she is an admin and not a real adjuster, she decided to deactivate her ID so that only adjusters are active in the system."

That's Not It

Pilot fish installs a new monitor for a user – and then promptly gets a request for a replacement monitor. The user's complaint: "After you installed the new monitor, I booted up this morning and started getting the message that my mailbox is full. Please install a monitor that does not give me this message. I need to be able to get new mail."

The Reason Why

"My Treo is not functioning. Please provide assistance when possible," user e-mails help desk pilot fish. "I dropped it in a puddle," user admits. "I know you shouldn't get them wet, but I'm not sure why it no longer is working." Fish can guess, though: The unit is so waterlogged he can see water behind the LCD screen. "I wanted to say, 'Well, duh!' but didn't," says fish. "I just offered to replace his unit with a spare I had in stock. Sometimes it's best to keep the comments to yourself."

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Security = $$

SECURITY MEANS MONEY. If you have any confusion about that, consider the survey results released last week by accounting firm Deloitte Touche Tohmatsu (you can find it online at *deloitte.com/tmtsecurity*). According to the survey, technology, media and telecommunications companies are doing a mediocre job at best of dealing with IT security issues.

But that's not the point. The point is that these money guys did an in-depth survey of security at 150 companies in this sector. Deloitte just did a similar survey on IT security at biotech and pharmaceutical companies, and Deloitte's fourth annual survey of financial companies' IT security should be out any day now.

If that doesn't wake you up, then you don't understand your CEO.

Let's be cynical and assume that your CEO doesn't really care about IT security. Let's guess that he doesn't care about the impact of a security breach on business operations, on customers and on your company's reputation. Let's assume that he really only cares about one thing: boosting your company's stock price.

(Actually, that's not so cynical. Plenty of investors, and big shots like The Conference Board, believe that's all he *should* care about.)

Now here comes Deloitte, the kind of accounting firm that stock market analysts pay attention to. And Deloitte says IT security is important. Important as in bottom-line, dollars-and-cents important. Important enough that the accountants are digging into it on an industry-by-industry basis.

That's the kind of research that gets stock pickers to take their own looks at specific companies and their IT security. And when stock pickers care about IT security, your stock-price-obsessed CEO will start caring deeply about it too.

As long as we're assuming, let's assume you've been trying for years to get the budget you need to really step up to the security challenge. But it's always been the toughest sell imaginable. There's no measurable return to show on a security investment. The whole idea of improved security is that it should measure as zero: *no* break-ins, *no* lost customer data, *no* public embarrassment, *no* dollar value to report as a loss.

How the heck do you sell that to the boss? You can't. And you haven't.

But suddenly your CEO is very receptive. He wants IT security. He wants it now. He's willing to pay.

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That's a dream come true, right? Not unless you can deliver the right kind of IT security — the kind that helps push up the stock price.

Focus on the wrong areas so your company still scores badly on security with investors, and you'll be worse off than you were before. Your dream will turn nightmarish: You'll lose that security budget, lose credibility with your CEO and maybe lose your paycheck, too.

What can you do? You can start now to prepare an IT security improvement program that will make your CEO happy *and* meet the rest of your company's needs.

Begin by poring over those Deloitte survey reports. Deloitte's analysts are especially concerned about phishing, pharming, internal misconduct, employee training, encryption and business continuity. That means you should be, too. Even if you don't buy into their priorities, those are the things you'll be graded on.

Now add the security issues you've already identified as important for your company. Then stitch together a plan that's guaranteed to pry loose money from your CEO because it directly addresses things that will affect what he cares about: the stock price.

Is that a cynical cheat? OK, maybe it is. Here's your choice: You can keep banging away fruitlessly, or you can use cynical cheat to get your organization the kind of IT security it needs.

You *can* sell your CEO on security — if you sell him the right things.

Just remember: Security means money, the kind of money your CEO understands.

And now you understand it, too. ◆

Malfunctioning Parts

Something's wrong with this optical mouse – or is it the PC? "The cursor would be OK for a moment or two, then it would leap to an unpredictable extreme of the screen," says pilot fish, who tries swapping in an identical replacement. Same problem. "In frustration, I pushed the mouse away from me and onto the desktop. And then it behaved. I looked at the mouse mat. It was a nice, pale-gray color with delicate changes in hue and a logo in th. center. Who would have thought that, in an entire PC, it woul. be the mouse mat that was malfunctioning?"

SHARK TANK

Hello, Dali

Trouble ticket reads, "My keyboard has melted." And so it has. "It resembled some of Dali's more off-the-wall works," fish reports. "The numeric keypad had clumped together, and the Enter key had started to blend into the Shift key." What happened? After spilling water on it, the user decided to dry it herself – on an electric heater. "Then she started to explain to the user across the way what she was doing," says fish, "which led to a conversation about PC problems, and she lost track of the time."

Unreal

Regional admin at this insurance company calls pilot fish to complain that she has lost access to the adjuster management system. "She says she was able to access the system yesterday but can't log in today," fish says. "I go through the logs and determine that her ID has been deactivated – *by her*. When I ask her about it, she says that since she is an admin and not a real adjuster, she decided to deactivate her ID so that only adjusters are active in the system."

That's Not It

Pilot fish installs a new monitor for a user – and then promptly gets a request for a replacement monitor. The user's complaint: "After you installed the new monitor, I booted up this morning and started getting the message that my mailbox is full. Please install a monitor that does not give me this message. I need to be able to get new mail."

The Reason Why

"My Treo is not functioning. Please provide assistance when possible," user e-mails help desk pilot fish. "I dropped it in a puddle," user admits. "I know you shouldn't get them wet, but I'm not sure why it no longer is working." Fish can guess, though: The unit is so waterlogged he can see water behind the LCD screen. "I wanted to say, 'Well, duh!' but didn't," says fish. "I just offered to replace his unit with a spare I had in stock. Sometimes it's best to keep the comments to yourself."

DON'T KEEP IT TO YOURSELF. Send Sharky your tale of IT life at sharky@computerworld.com. You'll score a sharp Shark shirt if he uses it. And check out Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at computerworld.com/sharky.

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8:00am to 8:30am	**Registration and Networking Breakfast**
8:30am to 8:45am	**Introduction and Overview** Julia King, Executive Editor, Events and National Correspondent, Computerworld
8:45am to 9:15am	**Moving Towards the Agile Enterprise** Michael Hugos, Fomer CIO, and Author of *Essentials of Supply Chain Management* and *Building the Real Time Enterprise: An Executive Briefing*
9:15am to 9:45am	**IT End User Case Study: BNSF Railroad Company** Jeffrey McIntyre, Assistant Vice President, Technology Services, BNSF Railroad Company
10:00am to 10:15am	**Refreshment and Networking Break**
10:15am to 10:45am	**IT End User Case Study: Maryland Automobile Insurance Fund** Cindy Hughes, Chief Information Officer and Director of IT, Maryland Automobile Insurance Fund (MAIF)
10:45am to 11:15am	**IT End User Case Study**
11:15am to Noon	**Panel Discussion** Moderator: Julia King, Executive Editor, Events and National Correspondent, Computerworld

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